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ADDRESS.

MEDICAL PROGRESS, ITS HELPS AND HINDRANCES.

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Medicine, like all other things terrestrial, had its beginning. When disease entered the world, medicine must have been born to meet it. Who first concocted a cooling draught to quench a fevered thirst must forever remain unknown. What the first surgical operation, and by whom performed, is likewise shrouded by the impenetrable gloom of the past. While I would not rob Hippocrates of the honor of being the father of medicine, in that he probably was first to reduce it to a science, nevertheless the generations who preceded him must have been blessed with men skilled to heal in that they must have been cursed by disease. The depth and extent of their knowledge, measured by the aids they had, must have been little; their skill to use the crude means for cure, at their command, could not have surpassed their knowledge of disease. It may be that anciently inspiration more than investigation made men strong in ability to cure. This generation may learn lessons in hygiene from inspired Moses, who lived and taught before Hygeia was deified.

But it is not my purpose to trace the progress of medicine from its small beginning, in the very remote past, to its present proud position among the great sciences and arts. It is yet an unfinished science, and as an art still imperfect, notwithstanding our multitude of remedies and our surgical appliances by the thousands. Medicine progressed, hindered as she was through many centuries by ignorance and superstition, her chiefest enemies. Within the present century the greatest progress has been made. That the march of medicine will go on until she shall stand a perfected science, I can believe, though this end may not be attained for many centuries to come.

I believe that the time is coming when the world will be redeemed from ignorance, degradation and disease. Teachers, preachers, lawyers and doctors will all have much to do in ushering in the millennium.

The reason medicine has advanced most within the century now about to close, is that she has had fewer hindrances and more helps. Superstition, which was an incubus on the chariot of progress in past centuries, dwindled almost to naught before the present century dawned. Ignorance, the mother of superstition, failing in her power to fully nourish her offspring, began to pass into her decline, her power to prevent progress greatly lessened. While the darkness of ignorance and superstition has not entirely disappeared, it has been rendered less potent for harm because of the accumulated light of knowledge with which the world is now flooded.

The conditions which hindered progress in the past, if existing, could hinder now. Unfortunately, some of them do exist, and it is equally certain that they have their retarding influence.

HINDRANCES.

Bigotry, whether characterizing an individual or a class of individuals, in matters medical never had other than a harmful effect. It would be well if this ill-shaped monster could be forever buried, without hope of resurrection. Men who are not willing to accept facts presented by others, and will not weigh the conclusions that have been based upon them, are not the men who will make advances themselves, nor will they be helpful to others who would. Destroy bigotry and there will be no "pathies," but in their stead would stand one grand brotherhood of physicians. A medical bigot knows not enough to know that he does not know it all, and therefore always stands ready to destroy anything that does not emanate from a source peculiarly his own. Such an one would say, "I will not use this instrument because it was invented by a homeopath; I will not administer that drug because it was introduced by an eclectic; I will not bathe my fevered patients nor give them cooling draughts because this is the method of the hydropath; I will not listen to suggestions coming from common people." The man who would attain to the greatest wisdom must gather grains of thought from all fields, must use his judgment in separating the good from the bad, and must be willing to feed his fellow men from his well-filled granary. If Jenner had not listened to the stories of the milkmaids, vaccination would not have been discovered, and the era of immunization, inaugurated by Pasteur, but founded on Jenner's discovery, would have been longer delayed. We should not forget that all people are God's people, and that He may use one or another in bringing into the world the good which comes alone from Him. Away with bigotry and send bigots with it!

Jealousy, although a personal property, can do a general harm. It is always a sign of weakness and is usually directed against one who is stronger, or gives promise of becoming so. Medical jealousy is a medical cur that rarely faces the one whom he would frighten, but watches for his opportunity to slip up from behind, and always with more bark than bite. A timid though talented man, just entering the field of investigation, may become so frightened by the bark of jealousy as to flee the field and forever fear to enter it again. Thus to the world may be lost results that otherwise would have followed. The medical man who is afraid of jealousy deserves pity; the jealous man merits only conempt.

Laziness, an inherited tired feeling, afflicts some men to such an extent that they neither accomplish anything themselves nor do they help others who would

do something. This is a sort of passive hindrance to progress, and is harmful chiefly when it engages in idle conversation one who would be better employed. Of all professions and callings, the lazy man is least at home in medicine.

Carelessness, in more ways than one, may be the means of preventing progress. A careless reader can not get all that may be in the printed page: a careless observer can not properly interpret symptoms, and therefore may miss the mark in prescribing remedies. A careless man may have thoughts but he does not note them and they fly away, like a beautiful bird, to return his way no more. Such a thought noted within the pages of a little book, recalled at a more leisure time by a glance of the eye, and amplified by the reasoning powers, might bring strength to the person and progress to the profession.

Indifference about medical matters and medical men is not calculated to give speed to the car of progress. One thus affected may answer promptly all calls from the sick and may relieve them from their sufferings. Every page he reads may bring him profit; every patient may be an open book from whose leaves he gathers useful lessons. He is content with these two sources of information and what he gets he appropriates to his individual and exclusive use. He counts himself wise without knowing that he is foolish. He is of few words and therefore appears to be full of wisdom. He meets not with his brethren in medical societies for mutual improvement. His own thoughts he hoards as a miser does his gold. He is conscious of his strengh but he is only too careful not to impart it to others, either by word of mouth or in the printed page. When he dies the good he has done is buried with him.

Exclusive medical organizations are not promotive of progress in the fullest sense. In a science so broad and with aims so high, narrowness in organization is an abnormality. The few who compose such a society may be the salt of the earth, but their savor is not so likely to be of service as if it were not thus enclosed. A holier-than-thou air emanates from a room containing such a coterie, and that is calculated to cripple the influence of the organization. To be *one* of *one hundred* has in it more sound than sense, and to be proud of such a distinction is more likely to hinder than he is to help the general progress. Such organizations tend toward becoming mutual admiration societies, and the members sometimes may imagine that the great body of physicians on the outside look upon them with admiration and awe. An exclusive organization with a national name is a travesty. It would be far better to say the "*best* one hundred" or "*the* one hundred," which would be a more modest way of putting it.

Vanity in a medical man is not usually well-founded and often is unregulated. Such a vanity always harms the possessor and is continually in the way of both personal and general progress. Competition is hateful to such an one, and without competition there can be no progress. If a man, by chance, has one thing that might excite his vanity, he doubtless has something else that should humiliate him. The peacock is proud of his feathers as he spreads them in the sunshine, but is humbled when he sees his feet; yet his feet are more useful to him than his gaudy tail. But prudent, well-governed vanity is a good thing, for with it competition is wedded and the legitimate offspring of this union is progress.

Common prejudice of all times and *laws* of some civilized countries have been hindrances. Dissection, vivisection and experimentation, against which the multitude are prejudiced, are as essential to advance in medical knowledge and skill as light, heat and moisture are to the growth of vegetation. If there is any excuse for medical men in politics it lies in the line of their preventing the enactment of laws that would lock the wheels of medical progress. At this moment the Congress of these United States is being urged by some who think more of the lower animals than they do of mankind, to enact laws against vivisection in the District of Columbia. If they are successful in this, they will conclude that it is just as wrong to cut up a dead man as it is to cut on a live rabbit, and they will ask for laws against dissection. It would be but one step further for them to ask for the enactment of laws against administering medicines to the poor in hospitals, whose virtues had not already been proved on millionaires. Thus encouraged they would leave Congress and go into our State legislatures and plead for the enactment of similar laws. If such laws should ever find their way into our statutes a strict enforcement of them would put an end to medical progress in this country. Let us hope that the men who make the laws for us will not be so barren of brains.

The public (not all the public), of whom *preachers* (not all the preachers) form a part, may be the means of hampering medical progress by encouraging quackery, using vile nostrums, and endorsing quack appliances which bear high-sounding names. Serious ailments lead people to think only of men skilled in healing; slight ills, or imaginary afflictions, afford the opportunity to quacks and nostrum dealers to deceive the people, and while under the pall of this deceit they forthwith "certify." If there is a man whom the people deify it is the family physician, and yet they degrade him when they buy a bottled nostrum, visit a quack for free consultation, or wear about them a device that has more name and price than power to do good. Let the people frown on quackery and refuse to buy, then quacks will vanish and the nostrum trade will die.

HELPS.

Some of the specific aids to the medical advancement of the century now about to close may be mentioned:

Anesthesia, local and general, has been given us, making painless surgery not only a possibility but a reality. While the hint for painless surgery was given more than six thousand years ago, when "the Lord God caused a deep sleep to fall upon Adam, and he slept," while the rib was taken from his side, it will always be a matter of pride to physicians of the South that Long, of Georgia, in 1842, was the first man to produce general anesthesia, and to do a painless surgical operation on sensitive human structure. It will likewise always be a matter of regret, on our part, that his modest nature and retiring disposition prevented his making public, except to a few medical friends, his great discovery, until, after a lapse of four years, Morton, of Massachusetts, announced his independent discovery of anesthesia. It will always be our pride as American medical men, to proclaim that our country gave anesthesia to the world. Without this boon surgery would have continued painful, and the great progress which has since been made would have been impossible.

Koeler, not then an American citizen, gave us cocain as a local anesthetic, in 1884. In paying homage to him now, in recognition of the good he has conferred by his discovery, we honor an American citizen, for he resides in Greater New York.

Antisepsis, the introduction of Lister, and its legitimate outgrowth, asepsis, have so lessened the former disastrous results of surgery that the surgeon has been made bold in his operative work. Because of these gains untold suffering has been relieved; and, in innumerable instances, life has been prolonged. The greatest progress that surgery has ever known has been made within the last half of the nineteenth century, and the two factors that have had the most to do with this progress are anesthesia and asepsis. A closer study of pathology and symptomatology have aided greatly in the march of surgery.

Electricity, once known only by its riding the storm, leaping from cloud to cloud, and occasionally sending its shivering lance to the earth through some giant oak, a thing of superstition and dread, has been tamed to serve the well and heal the diseased. When Franklin tapped the cloud with his kite and brought the fiery fluid in a gentle stream down the slender cord to the key in his hand, he dreamed not that, in the nineteenth century, it would be made to light our streets and drive our cars. When Galvani saw the muscles of the dead frog contract and relax under the influence of this subtle agent, he had no thought to what uses it would be put by medicine and surgery ere the dawn of the twentieth century. When Crookes invented his tube only a few years ago, he did not foresee that, by means of it, Roentgen would be able to make shadow-graphs of things hidden from the light of day. Electricity is to-day one of the invisible forces giving speed and effectiveness to the progress of medicine.

Specialism had its birth in modern times, and has been a most important factor in the advance that our science and art have made. Neurology became a possibility with Wilson's study of the brain in the seventeenth century; but she did not grow to her present beautiful proportions until men of the nineteenth century devoted their time and talents to perfecting the work begun so long ago. McDowell's boldness in opening the abdomen of his Kentucky patient, led men to a more careful study of the pelvic and abdominal organs, and made gynecology and abdominal surgery a possibility. Who does not admire the men in this specialty for their boldness in operative procedure and their daring in the coinage of terms.

Helmholtz's invention of the ophthalmoscope, in 1851, created modern ophthalmology, and gave to medicine one of its most useful branches. It bears to-day the proud distinction of being more nearly founded on a purely scientific basis, than any other department of medicine. Proud of her progress and position, she is humiliated only by the fact that gynecology, her younger sister, has far surpassed her in adding long and high-sounding names to the medical vocabulary. Other specialties might be mentioned that have done much in advancing medicine.

The Drug Supply of this century, has had much to do with therapeutic progress. The mineral and vegetable kingdoms have been free in their gifts of remedies for human ills. Coal taken from the bosom of the earth has yielded her products for easing pain and reducing temperature. The cinchona tree wrapped in her medicated bark, stood for centuries ready to give her antidote for malaria; but this power was unknown and unused until modern times. The oils and juices of a thousand plants have given to medicine their powers to destroy germs or neutralize their ptomaines. While much has been given for the asking, much more remains to yield disease-preventing and health-restoring power to the earnest, active searcher into nature's secret resources. On the mountain tops, on the sloping hills and in the valleys of Tennessee there may be plants growing whose properties, if known and used, would surpass, in power to prevent or cure disease, anything that has ever been brought from any clime. How these secret forces may be extorted from nature's hidden grasp, and by whom they shall be given to medicine, remains to be seen. Some of our young men within the coming year may woo the forest and the field and win therefrom something new that will be of service to the suffering world.

Rivalry in investigation is one factor in the march of progress. One possessed of this quality, like the mastiff, is conscious of his strength and faces him whom he opposes. He imparts some of his own courage to his contestant. At the end of the contest right wins and the late contestants should enjoy the results together.

Energy and industry are more powerful in the life work of a physician than are the circumstance of high birth and the environment of great wealth. The story of the lives of America's most noted medical men tell to us too plainly that they were not born into the proud positions that they attained; and they were not wafted there by some gentle, uplifting breeze. At least one of the most noted medical men the South ever produced, spent his earlier days on the old farm among the pines of South Carolina. Fired with the thought that there was a greater work in a broader field awaiting him, he left the old home with only a few dollars in his pocket and walked the weary miles that intervened between that home and the city of Charleston, that he might there commence his medical education. A less promising outlook could have hardly presented itself. His inborn capacity for work was not allowed by him to remain dormant; but his acquired habits of industry made of him the power which he became. Couple industry and capacity together, no mountain is so high that it may not be climbed; no plain so wide that it may not be traversed. By such an one every opportunity is transformed into utility; every obstacle is brushed aside with the broom of determination.

If all the latent energy—the inborn capacity—of medical men could be transformed into manifest power, by the magic touch of the hand of industry, no known cyclometer could record the revolutions of the wheels of medical progress.

The Medical Society is one of the most powerful factors in both personal and general progress. Its existence presupposes that the members have accomplished all that is required of them, in the prescribed courses of a medical college. There may be ever so much fire in a flint, yet without friction it can not be called forth. The Medical Society is designed to bring out the fire of thought from the reasoning centers.

The ideal medical association probably does not exist, and yet is a possibility. It is not my purpose to depict a perfect organization. The chief design of every medical society should be the advancement of

knowledge and the enhancement of skill. Its doors should be wide open to all honorable members of the profession, in the territory it covers. Bigotry and envy should not only not be placed to guard these portals, but they themselves should be prevented from entering, because both are enemies to progress. Fraternal feeling and professional propriety would be a sufficient safe-guard. The password should be "honorable medicine;" and the motto: "We will walk together in the pathway of progress." A rightly organized and properly conducted local society contains the germ of power. Each member, like the children of one family, feels at home, and basks in all the freedom and ease that the word home implies. They get training in this school that fits them for the college of the State society where they may find even broader and better opportunities for advancement. The smaller organization should bear a definite relationship to the larger; and their workings should harmonize. Both should be governed by laws having in them the same spirit of progress. Continuously in training in the local and State societies, every member should unite his powers with those of his fellow in perfecting the national organization. What a power these several organizations would become if only their full importance was appreciated by all members of the profession and by the laity. Some good but misguided men will not attend medical meetings. One does not often read in the obituary of such a man that he invented a lever for lifting the world of medicine to a higher plane. The immediate duty a physician owes to the public may often prevent his attendance at medical meetings; but when he can attend, and does not, he fails in the performance of a duty he owes to the public, to the profession and to himself. May the day speedily come when medicine can claim an organization in every city and county; when State societies shall have on their roll the names of all members of every local organization; when that grand ASSOCIATION, the AMERICAN MEDICAL, shall be constituted of all the members of all the State societies.

Medical Colleges have aided in the progress of the past, are doing better work in the present and will accomplish still greater good in the years to come. The medical schools of to-day are greatly in advance of those of even a decade ago; and the best schools of one hundred years ago are as nothing in comparison with the most advanced schools of to-day. If the medical colleges of the past, with their limited facilities for imparting instruction, turned out men who grew to be giants, what ought the shools of to-day do? Men towering above their fellows in medicine in past centuries, were few, and because of their fewness they attracted the greater attention. Larger medical giants, but more of them, are found in modern medicine. They attract less attention than in the past because they are so much more numerous. Our great men of to-day far surpass the greatest of other centuries, both in the depth and extent of their knowledge and in their power to apply it. Graduates of a few weeks ago know more of medicine than Galen ever dreamed of.

While medical colleges are still not perfect and should be further improved, on many lines, a greater care should be exercised in scrutinizing applicants for admission. A man to enter on the study of medicine should have much of the quality known as "mother wit," or common sense; he should be trained in literature and in the sciences, at least up to the point of development of his thinking powers; not only should he be mentally sound but he should also be morally pure; and he should feel toward medicine somewhat as Paul felt when contemplating the ministry: Woe is me if I practice not medicine. No young man should be encouraged to wield the surgeon's knife or dole out doses for disease who is better fitted by nature and acquirements to tend sheep on the hillside or herd cattle on the plains; to build houses for the people to live in or make clothes for them to wear; to construct cars for commerce or man ocean steamers. There are a thousand and one callings in life ready to honor men, and from which men can get honor if they faithfully follow them.

Medical journals are streams of water for irrigating the garden of thought. The vitalizing fluid of the profession is continually coursing through the pages of our periodic literature. Sometimes this stream is poisoned by the plasmodium of egotism which now and then gives the reader a chill; sometimes it is made to lose its strength-giving power by the germs of the envious or the spores of one gifted in ridiculing. With all their faults journals are a necessary factor in the progress of medicine. If they were fewer in number they might be better. If those who imagine themselves gifted with editorial powers were really thus endowed, journalism would be on a higher plane. Fortunately the law of the survival of the fittest is continually doing its work. While a man is expected to buy the journal he reads he is not compelled to read all that he buys. The wise reader separates the trash from the treasure and appropriates only the latter. One of the duties of the editor, which is too often neglected, is to refuse the bad and infuse the good. He must read all that he would publish and should always have the courage to endorse the true and condemn the false. This he can do in editorial or in head-line. At a feast, the host can not equally commend all the viands he may place before his guests; but his action would be condemned should he set before them a dish he might know to be dangerous. But after all, the mental pabulum offered in medical periodicals is made up largely of contributions from subscribers. How much better these contributions would be if the prime object in presenting them was the making of leaves in medical literature for the healing of the people. The mission of the medical journal will not be brought to an end until medicine shall stand a perfected science.

Books are as essential to medical life and activity as bread is to physical force. Books may be poor in matter and style, as bread may be bad in quality and kind. As bad bread brings physical discomfort and predisposes to physical inactivity, so a poor book depresses mental power. Discretion in the buying of books is a necessity; the buying and the reading of good books tend only toward advancement. A good book is a storehouse from which all may draw without danger of exhausting. Of the making of books there is no end. Even one's enemy may write a book, if so to him, of course, the book would be a bad one. While the profession can not limit the making of books it is fortunate that it can control, to a large extent, the sale. Unprofitable books die with the first edition unexhausted, bequeathing to their authors no estate. The truths contained in good books will endure while time lasts. An individual book may not reach many editions, but their contents in some other form will extend across the stretch of time, and will always add to the speed of progress.

Enthusiasm has always been and will always be the spirit of progress. Its correct meaning is not always in the mind of the man who uses the word. The term crank or maniac would aptly apply to some who are miscalled enthusiasts. If we mean what we say when we call a man an enthusiast, we should have a feeling when before him, akin to that which possessed Moses when he stood before the burning bush, for he knew that God was in it. Not less certain is God in the genuine enthusiast, burning within him but not consuming him, a marvel to angels and men. It was in the power of Moses to have laughed at the bush ablaze, and to have walked from it with covered feet, but if he had so acted he would never have learned the lessons that made him the leader of his people, and the framer of laws for the nations of all subsequent time. The wisest as well as the humblest may learn lessons from the enthusiast that will be both helpful and enduring. Deliver medicine from cranks and maniacs who can but retard her progress, but give her more men who believe that God is the author of all truth: and, that for the general good of mankind, he sometimes takes up his abode in a man, firing him with an almost consuming zeal. When studying the firmament of medicine would that we could all cry out with the astronomer, as he gazes upon the stars, "O God! I am reading thy thoughts after thee." The plan of redeeming the people from disease is of Divinity, as is the saving of their souls from damnation.

The general progress in medicine is only the sum total of progress of individual medical men. Throughout the history of medicine there have been men who have created epochs and inaugurated eras. Harvey's discovery of the circulation of the blood was an epoch, prior to which medical thought groped in an uncertain light. The era of rational medicine dawned when Harvey enunciated the result of his investigation. The wonder has never ceased that the circulation of the blood remained so long unknown. Jenner's discovery of vaccination marked an spoch; but the era of immunization starting with it, continued in its morning twilight until the work of Pasteur caused it to break forth into the brightness of day. The noonday of this era has not yet arrived. Throughout the coming centuries men imbued with the spirit of Pasteur's work, will go on investigating with the microscope and the test tube, and experimenting on the lower animals, until in due time, the people who will, may become immune from disease. The medical world stood still when told the story of McDowell's daring, and she has not yet recovered from the astonishment excited by the brilliancy of the era of abdominal surgery, which he inaugurated. The wonder will never cease that, for so many centuries, appendicitis and ovarian growths were permitted to send their victims trooping to an untimely grave, because of the unfounded fear that a puncture of the peritoneum meant death to the victim.

Thus we might speak of scores of epochs and the eras that have followed them. The men who moved in these matters simply uncovered principles as old as creation. The streams which they tapped when opening these well-springs, had always been connected with the great ocean of truth, and were only just beneath the surface. Thirsting for these waters, God-guided they digged deep enough to find them. Medicine and the world have been made richer by their labors.

Not all the hidden streams of truth have yet been found. May it be the happy fortune of some who hear me to open up new fountains for refreshing the world.

Do we look longingly to the proud position of men who have attained eminence in medicine, without a thought of the rugged pathway they had to travel? We could not enjoy the one, if we would shrink from the other. Men must labor to climb, and wait to reach, the mountain tops of greatest usefulness.

Throughout the centuries medicine has been building her own monument. Before Harvey the work done only served to clear the ground and prepare the foundation. The corner stone of the superstructure is Harvey's discovery. Stone after stone has been added as discoveries have been made. As each tier stands completed, there is room for fewer stones in the one to follow. Some unenduring stones have been placed, but these have served to let the building go on. The rain of observation, clinical experience and legitimate criticism will cause the inscriptions on unsound stones to fade away and the stones themselves to crumble. Other workmen will be ready to remove these and in their places put material that will be more enduring. Some inscriptions will grow dim from the accumulated dust of neglect; but some one will come along and, with the breath of enquiry, will blow the dust away and make the reading clear and sharp again. The work of building goes on, some of the workmen preparing stones to place in the superstructure, but the great majority furnishing the uplifting power of encouragement and the cement of coöperation. The time will come when this monument will be ready for the placing of the capstone. This ceremony commemorating the final discovery necessary for making the science of medicine complete, will be performed as the millenium dawns, amid the applause of a world redeemed from disease.

ORIGINAL ARTICLES.

SPLENECTOMY STATISTICALLY CONSIDERED. WITH REPORT OF CASE.

Read before the Southern Surgical and Gynecological Association, at Washington, D. C., November, 1895.

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Assuming that the Association is deeply interested in the evolution of abdominal surgery, I presume to trace the history of splenectomy which will reveal forgotten facts established by the surgeons of old, which challenge the criticism and shame the technique of the most modern.

Physiologists are yet discussing the rule that the spleen plays in the animal economy, a question that was practically settled by Viard about the middle of the sixteenth century, he having removed the spleen from three patients, all of whom made perfect recoveries. Some twenty years before, Zacarelli appears as the first surgeon who successfully removed the spleen. These cases were not generally published and but few had the temerity to follow such brilliant leaders. As a consequence in the next two hundred years we find but twelve splenectomies. A large percentage of these were for wound with a protrusion of the organ. From 1800 to 1876 I find 28 splenectomies recorded with wide intervals. The next decade

yielded about seven per year. In 1888 it was the fad of the day, 21 operations being reported in that year, the work chiefly of Italian, German and French surgeons. Their mortality, over 50 per cent., was not encouraging, and since that date we have had only 45 operations, a very small number when we consider the rapid progress of abdominal surgery and the immense amount of work done in this special field. We must conclude then that splenectomy is not a popular operation, at least with those surgeons who operate for statistics. The consensus of surgical opinion seems somewhat adverse to this operation. I hold that such a position is erroneous as it is based upon statistics considered in the aggregate. If the proper analysis of these statistics be made and due consideration be given to the associate general condition, we can establish the fact that under certain circumstances the operation is justifiable.

Gathered from all sources I can find on record 194 splenectomies. Of these 126 were females, 57 males and in 11 cases the sex was given. Furthermore we find that in 46 cases the operation was undertaken for wounds or injuries. Of this number 26 were males, and 14 females. If we deduct these we find that the ratio of splenectomies for disease is 31 males to 112 females, showing the latter sex to be much more predisposed to disease of the organ.

Recalling that the weight of the adult spleen is only about seven ounces, we are awed by the pathology that so perverts nature as to magnify it into 8½ pounds, the largest spleen ever removed. The operator was H. S. Brown of England; the condition was leukemic hypertrophy. The patient died five hours after the operation, probably from hemorrhage. The largest spleen ever removed successfully weighed 11 pounds; the operator was Franzolini.

The size of the diseased organ has an important bearing upon the prognosis. In 41 cases in which the spleen weighed 2 pounds, or more, the mortality was 68 per cent. We should at least consider these figures in advising operation. Of the 194 cases eight are not entitled to be ranked as splenectomies, the operation in these cases being partial splenotomy for the removal of the protruding portion after wounds and herniæ. This reduces the total number of splenectomies to 187.

We may make a pathologic classification of these cases as follows: Leukemia, 36 cases; 31 deaths, 5 recoveries. In only 7 of these cases do the data show a microscopic examination of the blood. Doubtless this investigation was made in many others but it is not so recorded and I am forced to accept such statements as "leukemia," "leucocythemia" and "leukemic spleen" for the diagnosis and classification. In this class we are at once confronted with a mortality of 86 per cent. which unless we can discern something radically wrong in the technique, places the leukemic spleen out of the pale of operative possibilities, and we dare not charge this when such masters as Péan, Czerny, Wells and our distinguished American, Roswell Park, were the operators. Of the 31 deaths 16 were positively stated to be secondary hemorrhage, 9 others died from shock, and we all know that in abdominal work this term is only too often synonymous with hemorrhage. Should not this establish the fact that leukemia is a general blood disease of which the hypertrophied spleen is an effect and not the cause? These patients are hemophiliacs and leukemic spleen should be eliminated from the field of operative interference. Since we have only 5 successful cases of removal of leukemic spleen, their paucity entitles them to detail record.

Case 1.—Operator, Franzolini; date 1881; time of operation, twenty minutes. Patient, female, laborer, aged 22.

Diagnosis: Abdominal tumor from childhood, suffered from gastralgia, from 12 to 14 ascites and edema in lower extremities. Menstruated at 17, scarce and irregular. Symptoms of jaundice, no intermittent fever. At the beginning of 1879 dull pain in upper quadrant to left of stomach. Tumor hard, very little or not at all movable, obstinate vomiting, acute pain prevented rising to feet. Blood rich in leucocytes five times to normal. No albumin in urine.

Operation: Prepared by purgative pills; diet exclusively flesh for three days. Incision in linea alba 22 c. long leaving umbilicus to right, one half above, one half below. Splenic artery size of index finger, could introduce thumb into splenic vein. Ligation with phenicated silk; little blood lost; suture. Complete recovery.

Remarks: First successful operation in Italy. Spleen normal in color, quintuple in size. Removing 200 gr. of blood it weighed 1,526 gr.; 26 c. long, 16½ c. wide, 7 c. thick. There occurred forty hours after operation small dripping of blood from vulva; one year later blood almost normal.

Case 2.—Operator, Assaky; date, 1888; time of operation, 1¼ hours. Patient, female, age 26, married at 18, several children.

Diagnosis: Abscess of breast after first delivery, edema of limbs after last. Malarial fever at 12, inflated abdomen after the disease. Tumor in the splenic region, constitution weak, mucous surfaces pallid. Both pupils dilated, temperature normal, no edema except varicose veins. Mammæ voluminous. Intestinal functions normal. Linea alba pigmented, superficial veins dilated.

Operation: Incision on the median lines of the umbilicus to near pubis, 12 c. long, hemostasis. Incision prolonged above the umbilicus 4 c., catgut, chlorid of zinc, cautery. There were 18 superficial ligatures, 14 more profound, 9 in the peritoneum. Recovery.

Remarks: Blood, 5,000,000 corpuscles in cubic mm. White to red in proportion 3 to 100; weight 2,410 gr., size 35 c. long, 42 c. wide; measure on concave side 28 c. long, 17 c. wide; 7 c., 1½ c., 5½ c. thick.

Case 3.—Operator, Ceci; date, 1893; time of operation, one half hour. Patient, female, age 13 years.

Diagnosis: Tumefaction of the stomach from infancy. At three years put on milk diet until stomach became normal. The malady began two years back, attributed to a fall. She became pale, gums bled easily. Ossa normal, muscles weak, but little developed, adipose tissue thin, aspect meagre, senses normal. Abdominal tumor hard, smooth, roundish, oblique. Lower temperature over tumor.

Operation: Chloroform anesthetic, median incision to left of umbilicus 28 c. from xiphoid appendix to three fingers of pubis; a second 14 c. transverse and oblique parallel to left costal arch; distance 6 c.; ligation of splenic artery, excision of much splenic substance so as not to injure stomach; catgut ligature. Liver normal. That part of the capsule that was in contact with the stomach was left intact so as to avoid hemorrhage. Recovery.

Remarks: Weight of spleen without blood 1,300 gr., 25 c. long, 15 c. wide, 6 c. thick. Blood before operation, red corpuscles 3,592,000, white 15,000, hemoglobin 60. Blood after operation, red 4,250,000, white 15,000, hemoglobin 65. Removal of pus after operation by puncture, hemorrhage, fever, 300 gr. purulent fluid removed from splenic cavity.

Case 4.—Operator, Lindfors; date, 1892. Patient, female, age 20, peasant.

Diagnosis: Constitution weak, temperament lymphatic, five years before noticed increase of abdomen, specially of left side. Very round, acute pain, left part of abdomen occupied by tumor. Elastic, ovoid, very movable, 29 to 17 c.; circumference 25 c. Blood, 1 white to 250 red.

Operation: Chloroform, afterward ether. Incision 18 c. above umbilicus from right to left, a vertical incision from upper angle 6 c. to left side of angle. Abdominal walls divided successfully, hemostasis with care before opening peritoneum. Single adhesion to omentum. Omentum, etc., retained by sterilized gauze. Ligation of pedicle with aseptic silk in six divisions. Almost no loss of blood; suture completed. Recovery.

Remarks: Treatment four weeks previous to operation fortifying and stimulating. Weight without blood 116 gr.; length 25 c., breadth 15 c., thickness 7 c. Histologic examination: hypertrophy of fibrous element and diminution of pulp. Result:

augumentation of white globules, diminution of red, especially hemoglobin. No augumentation of thyroid and lymphatic glands.

Case 5.—Operator, Hartman; date, 1894. Patient, female, age 40, two miscarriages, no children.

Diagnosis: In iliac fossa and ascending to within one-half inch of costal arch, tumor flaccid, movable transversely from one fossa to the other. No area of dullness of normal position of spleen. Swelling of abdomen, continual vomiting. Was suddenly seized with meteorism. Headache of frontal type and so severe as to prevent sleep.

Operation: A sub-umbilical incision was made in median line, no attachment of spleen was found except by pedicle. It was lamelliform. The splenic artery was ligated, and then three other threads were passed, the last one constricting the whole pedicle en masse. The distal end of the pedicle was then tied near the spleen and cut between the last ligature and the others.

Remarks: April 7, hemoglobin 108, leucocytes 1 p. to 150, red 4,850,000; April 9, hemoglobin 90, leucocytes 1 p. to 137, red 4,400,000; May 20, hemoglobin 105, leucocytes 1 p. to 200.

The fortunate operators of these were Franzolini, Assaky, Ceci, Landfois and Hartman. That you may form some idea of the hemotasis demanded in these cases chlorid of zinc, actual cautery and 41 ligatures were required to control the hemorrhage, from the pedicle alone. In Assaky's case there were no adhesions.

In forming the second class, that of malarial hypertrophy, I accent the diagnosis as given in the report and if it is not expressed I have relied upon the history and symptomatology. In none of these cases was the plasmodium malariæ found. Under this head we have 40 cases, 24 recoveries and 16 deaths. To these I wish to add my own case which I trust I may be permitted to report in detail.

Mrs. J. S., age 33, housewife, multipara; native of Tennessee, family history good, has suffered occasionally with menorrhagia, but more recently from amennorrhea. She had malarial fever when 12 years of age, for the last three years she has lived in the western portion of the State on the banks of the Mississippi. She has suffered during this time with frequent attacks of intermittent malaria. In July, 1895, she had remittent fever lasting five weeks, from which she apparently recovered. About August 1, last, she suffered from acute pain in the left side. A tumor was then discovered in that region about the size of the fist. The tumor grew rapidly, and on October 8 she consulted me. Physical examination revealed a smooth, elastic, movable tumor, filling the left lateral region of the abdomen. Edges sharp and notched. It frequently changed its form; at times it appeared flat and smooth; again it would rise up into a sharp ridge extending from ribs to symphisis pubis. There was absolute dullness over the tumor. Vaginal examination revealed the uterus forward, the pelvis filled with a smooth hard mass, which upon change disappeared from the pelvis and occupied the left iliac fossa. She suffered with paroxysmal pain, a sense of weight and dragging in the left side, flatulency, nausea and occasional vomiting. There was some emaciation and slight anemia. There was no adhesion, ascites, vertigo or insomnia. The blood examination was conducted by Prof. W. M. L. Coplin in the laboratories of Vanderbilt University, and appears as follows: Blood examination case of Mrs. S. by Prof. Coplin: Date of examination, Oct. 9, 1895; number of red corpuscles, 3,800,000; number of white corpuscles, 31,000; ratio, 1 to 123; per cent. of hemoglobin, 65. The red cells normal in configuration; no large or irregular cells; leucocytes almost exclusively of the large polynuclear type, only a few mononuclear white cells being present.

The diagnosis was malarial hypertrophy of the spleen, and after due preparation the abdomen was opened by lateral incision at outer border of left rectus. The incision was about six inches long. The spleen was found displaced and free from adhesions, its pedicle was secured by interlocking ligatures. The pedicle was severed close to the organ. As additional security against hemorrhage ligatures *en masse* were employed, also individual deligature of splenic artery. After removal of the spleen bleeding from the abdominal incision, which before was insignificant, now became very profuse and required several ligatures. The peritoneum was closed by separate silk sutures, the abdominal wall coapted by the usual interrupted silkworm gut sutures. The post-operative history is a very stormy one. For the first twenty-four hours after operation the behavior of the patient was very satisfactory, pulse 122, temperature 100, respiration normal. The stomach quiet, urine secreted, 9 ozs. During the second day the patient restless, occasional vomiting, pulse 130, temperature 99, respiration 28, abdomen flat; urine secreted, 16 ozs. On the third day the patient became very weak, extremities cold, pulse 150, temperature 100, respiration rapid, 40, very shallow with attacks of dyspnea. During the twenty-four hours of the third day, only 2 ozs. of urine secreted. Some pain in the lumbar region, slight tympanitic distension of the abdomen. This was very peculiar, being entirely subumbilical. On the fourth day patient very dull, sleepy and slightly delirious, pulse improved, 120, temperature 100, respiration 36, but no dyspnea. Complained of severe pain in right side of abdomen and chest, depression and vertigo. Urine secreted 12 ozs. Fifth day general condition much improved, pulse 92 and full, temperature normal, respiration still rapid. Peculiar subumbilical sausage tympany marked. Bowels acted copiously. Urine secreted, 30 ozs. in twenty-four hours.

During the succeeding ten days patient suffered intensely with pain in left hypochondric region and adjacent area of the thorax; uncontrollable diarrhea, was drowsy and occasional vomiting. Tongue became dry and red, sordes appeared and rapid emaciation occurred, picturing in every way the closing scene of typhoid fever.

On the 14th and 15th days she passed a number of large, bloody and fluid stools, her pulse and temperature remained the same. The pain was relieved, tympany subsided and the brain symptoms disappeared. She expressed herself as much better. Marked and rapid improvement in general condition followed. All functions become normal.

One month after operation she was out of bed and looked ruddy and well and was in infinitely better condition than before the operation. Aseptic union of the wound throughout. Seven months later the patient is in good health.

The blood of Mrs. S. was examined by Professor Coplin and gave the following results:

Oct. 9, 1895, red corpuscles, 3,600,000; white corpuscles, 31,000; per cent. of hemoglobin, 65. The red cells normal in configuration, no large or irregular cells. The leucocytes are almost exclusively of the large polynuclear type, only a few mononuclear white cells being present.

October 13, operation.

October 19, red corpuscles 3,000,000; white corpuscles, 6,000; per cent. of hemoglobin, 60. Red cells somewhat irregular; a few microcytes and megalocytes and many of the normal-sized red cells pale, a few almost phantom. While the leucocytes are almost diminished in number their character is also changed; instead of the large polynuclear cell of the previous examination, the white cells are mostly of the lymphocyte type.

November 2, red corpuscles, 2,500,000; white corpuscles, 16,000; per cent. of hemoglobin, 50. Red cells more nearly normal in type; very few irregular cells. Leucocytes mostly of the large polynuclear type, and very much as they appeared before operation.

November 9, red corpuscles, 2,640,000; white corpuscles, 18,000; per cent. of hemoglobin, 50. Same corpuscular condition to be noted as that recorded in examination of November 2.

The third series of cases which I find it difficult to classify, for want of a better name, I designate as simple hypertrophy. In these cases there is no associate blood diseases, yet I would suggest that sufficient attention has not been given to the condition of the other viscera, especially the pancreas and the liver. In an investigation upon anatomic conditions alone we could assume that splenic hypertrophy would follow disease obstructing circulation in this organ. In a careful analysis of the recorded cases of simple hypertrophy, I can find allusion to the liver in only three. I question if this organ is not entirely overlooked in the diagnosis. In seeking to discover a

cause for this so-called simple hypertrophy we note that the organ is found to be "displaced" "wandering," "movable," "ectopic." At once the question arises: Is this displacement the result of the increased weight, traction and elongation of the pedicle, or have we in some instances, a congenitally long pedicle whose vessels are constricted by the mobility and changed position of the spleen, leading to pulp engorgement. Of 59 cases of splenectomy for simple hypertrophy 34 recovered, 25 died, a mortality of 42 per cent.; 9 of the deaths were due to hemorrhage, a preventable accident. With due precaution the mortality should have been 28 per cent.

Neoplasms from the fourth group: As primary growths they are rarely met with in the spleen, I can collect only five cases of sarcoma which may be thus tabulated: Billroth, female 43, primary sarcoma, recovery; Wagner, female 27, primary sarcoma, recovery; Helmouth, child, primary sarcoma, death; Frisch, female 31, primary sarcoma, death; Flothman, male 44, primary sarcoma of mesentery and spleen, death.

In all of these cases the diagnosis was corrobated by microscopic examination and can not be questioned. We note that four of the patients were in middle life, only one a child. Billroth in recording his case remarks upon the infrequency of primary sarcoma in the spleen.

The next pathologic condition demanding splenectomy is echinococcal cystoma of which there are six cases, four recoveries and two deaths. Simple cystoma of the spleen has been met with by three operators, Péan, Wells and Gussenbough. Péan's and Wells' patients were women. The tumor was diagnosticated as ovarian. Gussenbough's patient was a boy of 14. All these cases recovered.

In 1581 Viard is reported to have removed three displaced degenerate and dried-out spleens; just what that pathology is I leave you to imagine. All these cases recovered and were the second series on record. Of primary abscess and sloughing of the spleen, not due to traumatism, there are three cases with three recoveries. I found throughout the literature of this subject, one case each of syphilis, primary tuberculosis and fibroid degeneration of the spleen. Death occurred in each case.

Two cases of floating spleen, normal in size, are reported; one death and one recovery followed their removal.

One of the most frequent conditions demanding splenectomy is injuries to the organ by contusions or stab wound. After wounds of the abdominal wall, the spleen often herniates. The protruding part quickly becomes gangrenous. Under the head of wounds we have 43 cases, 32 recoveries and 11 deaths. While these cases appear in literature as splenectomies, in 8 of these the protruding part was removed; all of this number recovered.

Clinical memoranda are not always as clear as one would like upon the question of diagnosis. In many records the reporters are most artful in their phraseology, not declaring a diagnosis nor confessing error nor ignorance. In a summary of cases extending over a period of three and a half centuries it is a little difficult to gather exact data. I find only 99 cases recorded sufficiently in detail from which we may draw conclusions as to a diagnosis. Of this number it appears that a diagnosis of splenic enlargement was fully determined in only 57 cases. In 24 cases it is questionable if a diagnosis was made, in the remaining 19 cases there was absolute error of diagnosis. I can gather only 15 records of blood examination. In these the investigator seems to confine his work to estimating the relation of white and red corpuscles, without considering the character of the corpuscles or the amount of the hemoglobin. From this table we note that in three cases there was decided increase in white corpuscles after operation, with a diminution of the red. In three other cases there was a gradual decrease in the number of white, while the red remained as before operation. These data in part accord with the conclusion of Vulpins, who claims that after the removal of the spleen there is a leucocytosis, a temporary increase of white corpuscles.

It is held by physiologists that the spleen in the adult in conjunction with the red marrow of the bones plays an important role in the formation of red blood cells, yet in the few cases analyzed in which an accurate account of the blood was made before and after operation, in two there was slight increase in the number of red cells, in two others there was decided diminution. Concerning the function of the spleen with relation to the red blood cells, Emelianoff, in a recent number of the Archives of Biology of St. Petersburg, asserts that in the fetus the function of the spleen is the production of red cells, which function at birth is transferred to the marrow of the long bones. The change in function takes place gradually, that is through several weeks. But it is very doubtful if the organ in the adult, even after copious hemorrhage, takes part in the formation of red cells. One never sees red cells in the process of formation in the spleen. "It is very probable," says the same authority, "that the spleen takes an active part in the formation of hemoglobin." Vault and Jolyet, speaking from experiments upon animals, say that the removal of that organ is never productive of any derangement and therefore its function can be assumed by other organs, probably by the lymphoid glands. A careful examination of all cases recorded fails to yield a single case in which there was lymphatic enlargement following splenectomy. Upon like grounds I am prepared to accept the conclusions of Vulpins which is "The thyroid gland is not vicarious to the spleen." Exactly what division of extra labor is made among the various glands after removal of the spleen one cannot say; yet a few autopsies held upon the patients from one to three years after they have been deprived of their spleen, give us this information. Accessory spleens which at the time of operation were too small to attract attention have grown to the size of a walnut. Furthermore, fragments of the splenic tissue left upon the stomach and other viscera grew and preserved their normal characteristics. Schiff and Heitzen have endeavored to point out relationship between the pancreatic digestion and the function of the spleen. The pancreas of an animal deprived of its spleen looses its digestive properties. In contemplating splenectomies the surgeon must now feel he is sacrificing two organs. Since, however, beyond the cavil of the physiologist one can do fairly well without the spleen we are not likely to be deterred by their experiments. How well one's functions can be conducted without spleen is excellently illustrated in Tantoni's case in 1700 (Morgani, De Sedibus et Caus. Morb. 111 ep. LXV), in which the spleen was removed from a child. She grew to womanhood and bore children. It does not appear in this case that the splenectomy in any way influenced the anatomic and physiologic develop-

ment of the endometrium or Johnson's lymphoid structure; yet ample evidence is obtainable that endometrial diseases frequently occur in the history of splenic disease.

The symptoms of splenic hypertrophy are divided into two classes, first constant and second occasional. Of the first we have progressively enlarging abdomen, pain, weight and dragging sensation, anorexia, nausea and frequently most obstinate vomiting, vertigo, insomnia, dyspnea, emaciation and enemia. The occasional symptoms are hematuria, epistaxis and hematemesis. I wish in this connection to remark upon the constancy of insomnia as a symptom. In almost every detailed report it is mentioned and may be explained, I think, by the existing anemia.

I do not think it necessary to discuss here the physical diagnosis of splenic tumors and hypertrophy.

Our acquaintance with intra-abdominal disorders is so much more intimate than formerly that in the future errors in diagnosis will be quite the exception. There are two complications which occur in the life history of enlarged spleen deserving special mention, torsion of the pedicle and ascites. I am able to gather altogether eight cases of torsion of the pedicles. To these if it were proper I would add a case reported by me in the *Medical News*, April 1890, of splenic hypertrophy with torsion of the pedicle, diagnosticated as uterine fibroma with torsion of the pedicle. The woman died while preparations were being made for operation, the autopsy revealed the true nature of the case. Of the eight cases I reported all were women, six were multiparæ, two may have been though were not so stated. In four cases symptoms of torsion became quite manifest after labor or abortion. The symptoms of rotation of the spleen briefly stated are the following: Acute paroxysmal pain of the twisting character, more or less sharp; nausea, vomiting, frequently obstinate constipation so much so as to suggest intestinal obstruction; sausage tympany; tumor enlarges rapidly, becomes hard, tense and very tender. These symptoms remarkably simulate hemorrhagic pancreatitis.

The second complication to which I would call your attention is that of accumulation of ascitic fluid. It was present in eleven cases; nine of these patients died. Death was due to hemorrhage no doubt, though it is not so stated. The splenic hypertrophy in these cases was associated with, if not due to, hepatic cirrhosis, and after removal of the spleen by reason of the obstruction offered to the portal circulation there were double causes for increased vascular tension. Therefore a patient presenting this complication is predisposed to hemorrhage, a fact that should have due weight in determining the propriety of an operation. The first operation done in America was performed by Alston. Subsequently there were 28 additional operations performed, resulting in 11 deaths and 17 recoveries. Our honored fellow, Prof. E. S. Lewis of New Orleans, appears as the most successful American operator, he having removed the spleen in two cases of malarial hypertrophy. In one case the physical signs warranted the diagnosis of uterine fibroma. When the abdomen was opened he quickly discovered his error, but drew up the spleen, ligated its long pedicle and removed it. The second case was correctly diagnosed as an enlarged and displaced spleen. Both patients recovered.

Our honorable president Dr. Louis McLean Tiffany kindly gives me the following notes of his case:

Mrs. ——, age 45, came into my care December, 1893, suffering from a tumor in the left side of the abdomen. It was freely movable from side to side as well as up and down, but always extended six inches below the left ribs. When standing the tumor presented below the navel in the middle line; toward the linea alba the finger could be pressed underneath the tumor recognizing a more or less sharp border, broken in two places by depressions which suggested that the tumor was an enlarged spleen. The history of the patient showed that she had suffered for years from irregular attacks of malarial fever and that the tumor had grown for seven or eight years slowly. It was thought at first that the attacks of malarial fever were accompanied by pain in the tumor. At present not only is discomfort complained of, but inability to eat and digest food also. Examination of the blood showed slight relative increase in white blood cells. The spleen was removed Dec. 29, 1893. An incision sufficiently long was made from the umbilicus downward to the left of the linea alba, and from the umbilicus upward and outward as far as necessary. The spleen at once came into view with a long pedicle. The omentum was adherent to the under surface and was tied off in segments. The vessels entering the spleen at the hilum were separately uncovered and tied. Two small spleens not larger than walnuts were left. All went well, the patient recovered without trouble. Examination of the tumor showed that it was 25 c. long, 14½ c. wide, 7 c. thick and weighed 11,000 gr. It was hard and inelastic; the capsule tense and much thickened. In places it was very opaque, apparently by fibrous deposit. On section it was of a dark red color, nearly black; the pulp could easily be pressed out leaving large and prominent trabeculae which crossed in all directions. Microscopic sections were stained with eosin and hematoxylon. They showed enlarged blood vessels, the spaces between the trabeculæ contained large numbers of red corpuscles and a good many white ones. The sections looked like hemorrhagic infarctions, the walls of the blood vessels were thickened and infiltrated with small round cells. The capsule was thickened and infiltrated similarly, the glomeruli were seen with difficulty. Trabeculæ were increased in size and number and infiltrated with round cells. There was much coloring matter present and there appeared to be a general increase in connective tissue throughout the whole organ. The appearance justified the diagnosis of subacute indurate splenitis. The blood was normal when the patient left the hospital.

AMERICAN OPERATORS.

Goodell, leukemia, death; Markoe, simple hypertrophy, recovery; Miner, simple hypertrophy, death; Powell, wound and hernia, recovery; Alston, wound and hernia, recovery; Myers, malarial hypertrophy, recovery; Markham, wound and hernia, recovery; Markoe, malarial hypertrophy, recovery; Strong, leukemia, death; Willien, wound, death; McGraw, malarial hypertrophy, recovery; McGraw, simple hypertrophy, death; Nilsen, simple hypertrophy, recovery; Deaver, traumatism, death; Simmons, malarial hypertrophy, death; Roddick, traumatism, death; McCann, simple hypertrophy, recovery; Conklin, simple hypertrophy with torsion, recovery; Bond, simple hypertrophy with torsion, death; Pane, malarial hypertrophy, recovery; Bark, leukemia, death; Saurason, malarial hypertrophy, recovery; Penrose, simple hypertrophy, death; Yourkin, simple hypertrophy, recovery; Stephen, simple hypertrophy, recovery; Lewis, malarial hypertrophy, recovery; Lewis, malarial hypertrophy, recovery; Tiffany, malarial hypertrophy, recovery; Douglas, malarial hypertrophy, recovery; total number 29, deaths 11, recoveries 18.

THE EXTENSION CORSET AND ITS INDICATIONS.

BY ALEX. C. WIENER, M.D.

CHICAGO.

Lewis A. Sayre revolutionized the treatment of tubercular processes of the spinal column by the propaganada of absolute immobilization and freedom from pressure of the diseased portion. That the results obtained by his method were unprecedented is amply evidenced by the fact that his principles have made a triumphal tour around the civilized world and that the use of the plaster of paris corset has come to be considered indispensable in the treatment of Pott's disease.

The symptoms of tubercular infection of the spinal

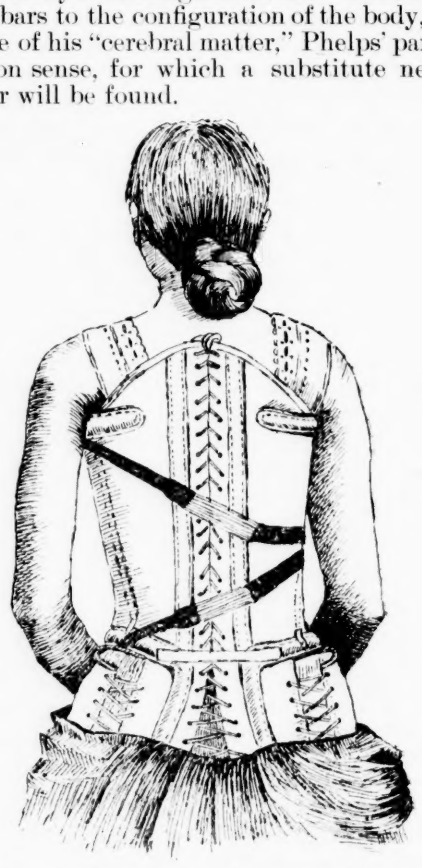
column, first described by Perceval Pott in 1783, have been dilated upon by Sayre in so clear and scholarly a manner that every physician ought to memorize his words, so as to always have them at command; for how many beginners in practice fail to diagnose properly the early stages of Pott's disease and owing to their lack of skill expose themselves to the serious charge of perpetuating for life in a fellow creature a deformity which is the constant source of physical and mental agony? We are still further indebted to Lewis A. Sayre when we observe that his principles are now being applied to the treatment of tubercular diseases of the hip and knee joint, thus constantly lessening the indications for operative interference, so that the young patient may be spared an extensive operation, painful treatment and a tedious sickbed.

Although Sayre, Phelps and others have clearly demonstrated the utter uselessness of the Taylor brace, these bandages are nevertheless sold in large quantities to the public by truss makers, who apparently have faith in the suggestive value of such a support, as it is impossible for them to demonstrate that a real extension and support is exercised by an apparatus which slips down upon the pelvis or excoriates the skin when charged with the weight of the head and trunk. But unfortunately, unlike hysteria, Pott's disease is caused by infection with the tubercle bacillus and precious time is wasted in using worthless instruments, the serious consequences of which are not slow to make themselves felt.

A. M. Phelps in his valuable paper on Spinal Supports, makes the following remarks on this important subject. "Previous to Sayre's investigations the Taylor brace has been exclusively used for the extension and fixation of the vertebræ, but many disadvantages resulted from its use, in that a mother or nurse being able to remove it at any time often handled the child in such a manner as to produce traumatism and injury to the diseased vertebræ. Further, the steel bars had to be frequently removed or excoriations would accur. When they do give support, they are uncomfortable, which is one of the strongest arguments against their use in Pott's disease of the spine. In place of this troublesome instrument, which is devised in a hundred different forms, Lewis Sayre introduced the plaster of paris corset to be applied while the patient is hanging in Sayre's suspension apparatus.

"We all agreed," continues Phelps, "that the best orthopedic instrument ever devised is the human hand. Guided by intelligence it applies forces for the correction of deformity more delicately and perfectly than any inanimate object ever invented. Plaster of paris is applied to the deformity. While it is yet in a plastic state the hand molds it to the correct position and holds it there until it becomes harddened or set. Can you not see that now the plaster of paris is effective as a brace or support only in proportion to the amount of cerebral matter concerned in its use? In the absence of the latter it is worthless."

Phelps' specific statement of the requirements of a brace brings us to the leading principle of the extension corset, which was first made by Hessing. Every inch of the bars used in the construction of the corset must be fitted to the figure, so that when the various parts are put together no pressure will be felt anywhere on the underlying soft parts. The work of fitting and correcting must be prosecuted with untiring exactness, until every part fits the body snugly, resting upon it without pressure. Herein lies the chief objection. The vast amount of labor which every corset involves is the principal reason why these corsets will never supplant the plaster of paris corsets in the clinical practice. A mechanic can prepare the steel bars according to given measurements, but the real work, that of fitting inch by inch, must be done by the orthopedic surgeon himself with hammer and rule in hand and the anvil at his side. These instruments are of equal importance in the operating room of the orthopedic surgeon as are those which are used in operations. In this method in adjusting steel bars the requirements made by Phelps are complied with. Just as the plaster of paris is molded by the hand of the surgeon in applylng the Sayre corset, so the surgeon guided by a thorough anatomic knowledge fits the steel bars to the configuration of the body, making ample use of his "cerebral matter," Phelps' paraphrase of common sense, for which a substitute never was and never will be found.

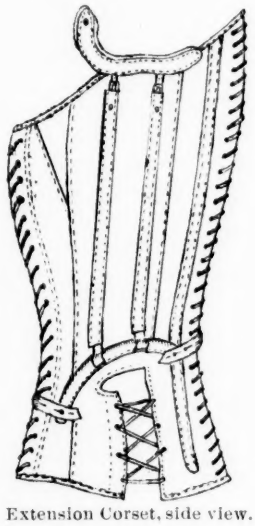


Extension Corset for lateral curvature of the spine.

A plaster of paris cast is taken of the patient while hanging in Sayre's apparatus. This cast filled with plaster represents the figure of the patient. A corset is cut according to measurements from French coutil, which should fit accurately but somewhat loosely, to leave room for the braces. The hip part consists of a steel bar which, starting backward from the os coccygis, runs upward to the spina posterior superior, and crossing the crest of the iliac bone laps over the anterior abdominal wall, terminating one inch above the Poupart ligament, thus riding, as it were, and resting on the crest of the iliac bone, with both shanks clasping the whole iliac region. A steel ring is then fitted in the arm-pit, upon which the shoulder rests firmly, as upon a crutch. After both these parts have been connected by steel bars, which must also closely follow the outlines of the body, so that their combined length will be greater than that of the spinal column, it is evident that, since the whole weight of the

shoulder and head rests upon the lower part of the corset, the deformed spinal column will first be relieved and then extended. After the spinal column has been raised so far that the given length of the side bars has been reached and no further extension can take place, the screws in the longitudinal slit of the bars must then be loosened, the space between the pelvis and the arm rest enlarged and fastened in this position. Thus, the correction conforms with the growth of the body as well as the improved condition of the diseased spine. The corset should always be drawn tight, fitting the body closely and if possible, should be worn at night. Elastic bands properly placed enhance the efficiency of the steel bars in the correction of the deformity.

At the end of his article Phelps gives the following indications for the different devices: 1, plaster of paris corsets for acute Pott's disease; 2, wooden corset for lateral curvature and cured or convalescent cases of Pott's disease; 3, the Beely corset for mild forms of lateral curvature, especially in girls; 4, the aluminum (Phelps) corset far permanent bracing; 5, the celluloid corset (Lorenz) in a way takes the place of aluminum.

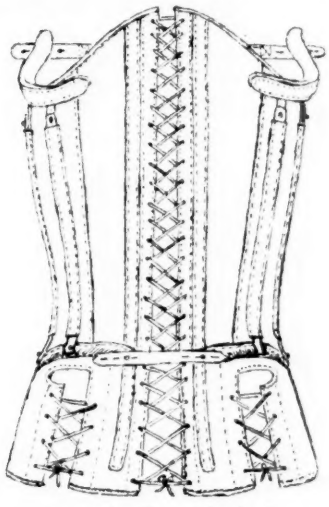


Extension Corset, side view.

While fully recognizing the value of these various apparatus, more especially on account of the simplicity of their construction, still the superiority of the extension corset for permanent extension must be acknowledged, because the effected spine is equally relieved from pressure and immobilized. This is evident from the instantaneous cessation of the reflex muscular spasms and pain. The length of the side bars can be readily adjusted. The corset may be taken off for constitutional treatment with ease (baths, etc.). Above all, it does not in any way interfere with extensive open air exercise which is essential in the treatment of these affections. Hoffa and Heusner are the most enthusiastic advocates of the extension corset in Germany, while Lorenz, too, uses the Hessing device in the construction of his corset, excepting only that the pelvis bar is replaced by a capsule of celluloid. The Lorenz corset, however, is too heavy and inflexible and the celluloid casting does not conform to the subsequent changes in the trunk during the course of treatment, as does the elastic French coutil. If the seat of disease be at the thoracic or cervical vertebræ, a collar should be added which is wider at the back of the head and finds its support on the mastoid process and forward under the lower jaw. Exactly in the center of the mastoid process a steel bar projects from each side which conforms accurately to the depressions between the muscles of the neck and the protruding collar-bone and reaches downward to the middle of the trunk. Here the bar is attached to the shoulder brace by means of an elastic band. The head may be immobilized or kept movable, according as the screws are drawn.

Admission to a hospital is desirable in having the corset prepared, so that the patient may be always on hand. Even after the corset is finished it is better for the patient to remain a few weeks longer, so that any defect may be noted and remedied and instruction may be given the mother or nurse as to the exact manner of fitting the corset.

It is easy to understand that at first patients, especially if children, feel uncomfortable in the corset. In the beginning, therefore, it is advisable to leave the corset on for only a few hours and to draw the string gradually until the maximum is reached. Care must be taken to distinguish between the feeling of discomfort which is common to almost every new garment and the actual pressure of a steel bar, which is indicated by a redening and soreness of the skin and must be relieved at once.



Extension Corset, back view.

Constitutional treatment should go hand in hand with local treatment. The majority of children suffering from tuberculosis of the bones are afflicted with anemia, lack of appetite, a tendency to nervousness and weakness of the heart. They have a pronounced dislike of nitrogenous foods, *i.e.*, meat and eggs and frequently milk also. Obedient to this hint of nature I have for a number of years prescribed a vegetarian diet with strict exclusion of beverages and of medicines, containing alcohol and have had the satisfaction of observing an increase in appetite and subsequent gain in weight. Beginning with milk, rice and apple sauce we change to heavier foods as the children are allowed freedom of movement, such as buckwheat, oatmeal, barley, sago, spinach, peas, beans, potatoes, the fruits of the season raw and cooked, etc. Small quantities of rich unskimmed and freshly cooked milk may be given and raised by degrees until a quart a day is reached. Often Horlick's malted milk proves useful for a change. Cod liver oil combined with phosphorus, lactophosphate of lime (Merck's) and extract of malt or iodids should only be given after

the children have gained in strength and their use should be discontinued if nausea or loss of appetite result. An effective means of improving the appetite and general health is warm sea-salt baths. It is advisable to begin with washing the whole body with sea-salt solution in a well warmed room, the water being lukewarm in the morning and warm in the evening. The whole procedure should not last more than three minutes and the skin should be dried, not by rubbing with a towel, but by gentle touching, so as not to wipe off the salt crystals which are precipitated in the pores of the skin. When the baths are found to agree with the patients, full baths should be taken three times a week, the duration not to exceed five minutes and the temperature of the water being about 98 degrees. In proportion as the patient grows stronger the temperature of the water may be gradually lowered. In the beginning the baths should be warmer, about 98 degrees, and should not last longer than five minutes, especially if there is any complication of the heart. By degrees the temperature may be lowered to 90 degrees and the duration may be increased to thirty minutes. It is difficult to give any special rules in this connection. The frequency, duration and temperature of the baths are regulated by the condition of the patient and the good judgment of the physician. In general, baths should not be given more than four times a week and the temperature should not be under 90 degrees. The loss of calorics from the system is not excessive. The stimulation of the peripheral nerves is so much greater in cooler water, which is of importance, first, on account of the strong irritation of the sensible nerve ends on the surface of the skin, as well as an irritation of the cerebral centers of sensibility, and, second, on account of hardening the system. By hardening we mean the accustoming of the nerves of the skin and of the mucous membrane of the upper air passages to exposure to cold, which leads to an increased generation of warmth with increase of appetite and stimulated metabolism in the organism and also stimulation of breathing. The salt contained in the water exercises a merely mechanical action, since after drying, the crystals of salt remain in the pores of the skin, where they act as an irritant on the nerve ends and blood vessels of the skin. For feverish patients there is no more reliable and gentle means of lowering the temperature and relieving the tormenting thirst as well as the debilitating night sweats. After the bath the patient should remain in bed for one hour and be careful to prevent perspiration, so that the pressure of the blood is not lowered to too great an extent and the heart's action weakened. Special care should be taken in the case of patients with complications of the heart and lungs. When possible visits should be made to the seashore during the season, where bathing in the surf, and the sea breezes exercise very salutary effects. The excellent results I have observed from the sea-salt baths makes me an enthusiastic advocate of this treatment in every case where there are evidences of constitutional disturbances either of tubercular or rachitic origin. But many mothers anxious that their children be restored to health as quickly as possible overdo the bathing to such an extent as to counteract the good effects. The physician, therefore, should insist on seeing the patient at least twice a month and should not allow the baths to be given longer than two months in succession.

In the natural course of tubercular infection of the spine a cold abscess will be formed surrounded by spongy granulations which penetrating into the spinal channel press on the spinal cord. It is very rarely the case, however, that pressure symptoms alone attend degenerated and sunken vertebræ. In these serious cases, in which paraplegia and total paralysis of the lower extremities have developed, the immediate application of an extension corset is necessary, which must be worn day and night, or for which a weight extension on the head may be substituted at night. Laminectomy is justified only when the pressure of the tuberculous pus and granulated tissue has become so great as to paralyze the bladder and rectum, and the patient's life is threatened by septicemia due to bed sores.

Although a discussion of the operative treatment of Pott's disease is beyond the scope of the present paper, still it may not be irrelevant to state that from a critical review of the literature in this connection the ultimate results of this operation are not such as to warrant the procedure without positive indications. Beside septic infection, hemorrhage and the difficulty of access to the diseased part, a miliary infection has been observed in some and a return of the paralysis in others, although all pathologic symptoms may have disappeared with surprising rapidity immediately after the operation. Another fact which has not received proper attention is, that an edematous swelling has been observed at that portion of the spinal cord which corresponds in the diseased portion of the vertebræ, and this continued after the removal of the pressure and eventually resulted in a return of the paralysis of the extremities. This edema lasts about two years. As yet its anatomic cause is not demonstrated. It is not improbable that iodid of potassium may reduce this edema and in this way the mysterious specific effect of this remedy on paralysis in Pott's disease may be explained.

In so far as the spinal cord is relieved from pressure, there is certainly a promising future in store for the operative treatment of Pott's disease. Judging from the effects of operative procedure on the more accessible joints, however, one is inclined to doubt that such procedure will ever bring the process to a standstill, and, for the present, conservative orthopedic treatment will have the better results to show as its methods are perfected. The universal introduction of the extension corset together with Sayre's plaster of paris corset will mark a most important advance.

I will restrict myself to a few typical instances. The following case was referred to me by Dr. E. W. Lee in the accompanying letter:

Dear Doctor:—I herewith send you a boy ten years of age, whom I saw for the first time only a few days ago. I found him with a temperature of 102.5 degrees, pulse 140 weak and irregular, vomiting and constant nausea, so that he could not keep anything on his stomach. A tenderness was found in the upper cervical region. The head was turned to the right like a torticollis, almost resting on the right shoulder; loud bruit on the mitral valve. I suspected a local meningitis starting from a tuberculosis of the upper cervical vertebræ.

Yours etc. E. W. LEE.

Passive and active motion of the head was impossible. No swelling was to be found. Digital percussion of the occiput and the subsequent rapid improvement fortunately failed to substantiate Dr. Lee's well founded suspicions. From the symptoms, I concluded that the process was seated in the atlo-axoid articula-

tion, and this was confirmed by the great tenderness in the region extending from the first to the third vertebra on the right side.

The boy was admitted to St. Joseph's Hospital and an extension with weights applied. The weights were gradually increased from one to seven pounds. Sea salt baths were prescribed and gave immediate comfort and relief. As soon as the vomiting had subsided vegetarian diet with plenty of milk was instituted. The corset was at once prepared. The boy was discharged at the end of four weeks, looking bright and well, with a gain in weight of eight pounds and wearing a tight but comfortably fitting corset with a leather collar attached, which held his head corrected to the left side. Without support the head had an inclination to turn to the right, but could be moved without pain, the tenderness of the upper cervical vertebræ on palpation having entirely disappeared. The apparatus he wears is almost entirely concealed under his clothes.

Karl B., Case 2.

How serious would have been the consequences had this boy been compelled to stay in bed or even wear a jury mast! With this strange-looking instrument he would have confined himself to the house frightened away through the taunts of his comrades, thus wanting the stimulus of outdoor exercise and cheerfulness, whose importance can not be overestimated in restoring metabolism and augmenting the vital forces in chronic diseases.

Through the kindness of Dr. Fischer I had an opportunity in Buda Pesth last September to examine a remarkable case of tubercular caries of the thoracic portion of the spinal column involving the second to the seventh vertebræ. Carl B., 28 years of age, has the following history: Both parents died of tuberculosis of the lungs. He had a kyphosis since his seventh year, which gradually and imperceptibly increased in size without causing him any pain. In the beginning of January 1891 suddenly without any apparent cause pain set in in the middle of the kyphotic part, which was soon followed by paralysis of the lower extremities, the legs ceasing to act almost instantly. The reflex action in the legs increased, the sensibitity decreased. When seated the patient held his shoulders so high that they were on a level with the tops of his ears. The kyphotic part formed an angle of 90 degrees. A lateral deviation was not noticeable. About one centimeter below the most prominent part of the kyphosis there was a painful spot, and from this point emanated the paralytic feeling above mentioned. The action of the bladder and of the bowels was not disturbed. Diagnosis: Tubercular kyphosis of the thoracic vertebræ, complicated with compression of the spinal cord. Every other means of treatment having failed he was admitted to

Karl B., with corset and collar.

Fischer's orthopedic hospital in Buda Pesth to be treated with an extension corset. Suspension of but a few minutes' duration relieved him very much and enabled him to lift his feet with ease, the kyphotic part becoming stretched about one centimeter and the spinal cord being relieved from pressure. At first the patient could hardly wear the corset, but he gradually became accustomed to it. After ten days the constant reflex contractions of the legs ceased and he made his first step in a frame support. To make the extension of the spine as effective as possible the patient was provided with a leather collar embracing the posterior part of the head and chin, by means of which the head was supported and the vertebræ stretched still more. When the writer saw the patient two years later, he walked about without a corset, only using two canes on the street. The pain in the back had left him and the reflex action and sensibility in the lower extremities were normal. His general health was very good.

In cases of lateral curvature of the spine in the sec-

ond and third stage, the extension corset has proven indispensable. In these cases the spinal column is only supported in order to prevent the muscles, which have been greatly strengthened by daily gymnastic exercises and massage, from again losing their tone through over-exertion. Special care must be taken to construct the corset so as to conform to the rapid changes in configuration. From the foregoing it is apparent that all patients suffering from injury to the spine and in need of temporary relief are enabled to walk about by the wearing of these corsets, whereas without this support they would have been compelled to remain in the extension bed. In this connection I would refer to my paper, "Ambulatory Treatment of Fractures of the Lower Extremities," published in the *Railway Surgeon* in February, 1896, in which the same principles were discussed.

So far we have been considering only diseases of the spinal column, whereas the universal character of the extension corset is still more in evidence in the successful treatment of an affection of the spinal cord, in the therapy of which even neurologists have achieved but indifferent success, that much investigated disease, locomotor ataxia.

Recent research has shed but little light on the nature of this malady of the posterior column, which in its first stages is characterized by symptoms so vague and baffling that only a neurologist is in a position to make an accurate diagnosis. Under these circumstances Leyden acknowledged that no plausible theory has yet been advanced for the progressive degeneration of the nervous system and that we must for the present be content to consider them as peculiar processes. Even the strenuous efforts of Charcot and his pupils to classify locomotor ataxia among the systemic diseases were futile. In the therapy of the disease, too, but little little progress has been made within the last decade, although it would have seemed, that the fact, that in about 80 per cent. of the cases the disease was preceded by syphilitic infection would have given rise to better results by the institution of an antisyphilistic treatment. The suspension method is the only original innovation, which has been made in the treatment of locomotor ataxia. Added to the electric treatment, which is imperative, it is a mechanical means of great value, although it is by no means all that can be desired. This mechanical treatment of locomotor ataxia was first employed by Dr. Motschukowsky, of Odessa, with great success, and his results were published in the *Wratsch* in 1883. Dr. Motschukowsky reached the following conclusions:

1. For two or three hours after suspension walking becomes easier and steadier. After eight or ten sittings it becomes permanently firm and steady.

2. The shooting pains cease entirely and do not recur even during thunder storms and changes in the atmospheric pressure. Some patients who had previously experienced much pain during north and northwest winds became entirely indifferent to the changes of wind.

3. The retarded pain current is considerably hastened, while the paresthetic feelings, such as chills, formication and girdle sensation subsided.

4. After twenty to thirty sittings there is a gradual subsiding of the ataxic symptoms. The Romberg symptom disappears, the tactile sense improves and the atrophied muscles increase in size.

5. Urination and defecation are once more under the control of the patient. The quantity of indican in the urine decreases, the sexual functions are restored, the gastric pains become milder and less frequent.

6. In some cases the eyesight is improved: the pupils become more movable and dilated; there is a gain in weight. In no case has a return of the knee phenomena been observed, and no improvement has been noticed in the dilatory skin and muscle reflexions.

Motschukowsky has ascertained by exact measurements, that the length of the spinal column increases from one to three centimeters while suspended in Sayre's apparatus, in consequence of which the relation of the spinal cord to the spinal channel is undoubtedly altered, so that the nerve roots assume a more vertical position, though without being perceptibly stretched. Suspension also increases the pressure of the blood, the breathing becomes costal and the vital capacity of the lungs grows larger. Motschukowsky is of the opinion that the white substance not yet infected may preserve its physiologic functions for some time by favoring the establishment of collateral circulation. What Motschukowsky especially commends in his method is its mildness as compared with operative and mechanical stretching of the nervi ischii, which succeed in reaching but one part at a time and the first of which is frequently followed by trophic disorders, the second being annoying and painful to the patients.

As contra-indications to his method Motschukowsky enumerates the following:

1. Disease of the heart and compensative derangements.

2. Sclerosis of the arteries and aneurysms, anemia in a high degree and a tendency to faint.

3. Pulmonary cavities and emphysema.

4. Previous apoplectic, epileptic or epileptoid attacks.

The success of the treatment is less apparent in the first stages than in the secondary.

Charcot, in the *Progrès Méd.*, 1889, fully confirmed the statements made by Motschukowsky. Out of fourteen cases he had observed eight that were considerably improved by suspension. Wm. J. Morton concurs with him in the following words: "My experience leads me to confirm in every particular the results observed in the eight cases at Salpetrière. We shall have to admit that the aggregate of improvements and cures, whether temporary or permanent, is far beyond that which has been attained by any other means, and for that reason this method must be regarded as the most signal advance yet made in the treatment of this hitherto intractable disease."

Weir Mitchell has modified Sayre's apparatus for this special case so ingeniously that even those seriously ill may be safely treated with it. Yet notwithstanding these indisputable facts the suspension treatment has of late years been entirely discarded, chiefly, in my opinion, because the majority of patients growing tired of frequent suspension even in the most comfortable apparatus, would not allow the physician to carry the treatment to a satisfactory end. Only recently, however, Dr. Brower, in an elaborate article published in *The Corpuscle* in 1895, refers to the abandoned treatment in the following words: "My experience has taught me that suspension is of value in the stage of incoördination. I would recommend suspension treatment three times a week, lasting from

five to fifteen minutes, according to the effect on the patient. I think it should be continued as long as possible."

Bechterew is convinced that even where no anatomic changes are found in the eye the power of vision is materially increased by suspension. (*Neurolog. Centralblatt*, 1893; On the Influences of Suspension on Visual Derangements in Affections of the Spinal Cord.)

It is impossible to assert that the statements of men like Charcot, Brower and Morton are erroneous. Why is it, then, that the treatment of locomotor ataxia by suspension has been abandoned? When we consider that, although suspension should last but half a minute at first, and should only gradually be increased to thirty minutes, and further that the patient should be treated only every other day, the salutary effects of this method are nevertheless apparent in the extension of the vertebræ as well as in the probable stretching of the nerve roots, the question involuntarily arises: Why are not the vertebræ kept permanently stretched and the good effects perpetuated? No instrument is better adapted to this purpose than the extension corset, the application of which removes the contra-indications mentioned by Motschukowsky and does away with the disadvantages of the suspension apparatus. The corset should, therefore, be regarded as a permadent suspension apparatus, the object of which is to check the degenerative process in the spinal cord without interfering with the electric, medical and hydropathic treatment of the patient. In other words, the patient should continue under the specialist's care while wearing the corset, just as the treatment remains in the hands of the physician while the bloody nerve extension is made by the surgeon. In both cases the surgeon's skill is at the command of the neurologist.

The following case of locomotor ataxia is reported by Prof. Dr. von Jürgensen, Tübingen, Germany, who personally observed its progress with great care.

History: While taking the waters at Kissingen in 1884 the patient was suddenly afflicted with constipation and want of appetite. Later on a heaviness in the legs set in, the power of locomotion decreased and the carriage became stooping. In March, 1885, after having attended a dancing party he suddenly experienced a feeling of contraction and numbness in different parts of the skin, especially about the breast and arms, and at times the sexual functions were weakened. Evacuation was effected only by artificial means. Nervous pains were frequent. Treatment with massage and electricity and the use of the waters of Wiesbaden resulted in an improvement in the general health, but the above mentioned symptoms did not entirely disappear. In March, 1888, there was a severe relapse. He experienced a sensation of contraction at the throat, which made speaking and swallowing of food very difficult. He suffered from frequent and violent nervous spells. There was a rapid loss in weight. Professor Mendel, of Berlin, finding his treatment of little avail, recommended the wearing of an extension corset, which Hessing himself constructed. The neuralgic pains, the girdle sensation and the numbness of the skin rapidly disappeared. The appetite increased and digestion became normal. His gait became firmer. Although he had resumed his business vocations, it did not in any way retard improvement, and the patient could walk five miles without being fatigued. With the exception of a slight uneasiness when walking in the dark, he felt perfectly well. His finger nails, which had previously been distorted, resumed their normal shape.

Equal success is not likely to be experienced in every case of locomotor ataxia, as 25 per cent. of the cases are not in any way, even temporarily, influenced by artificial stretching. In the remaining 75 per cent. of the cases which react more or less after a suspension of so short duration, permanent extension may be expected to effect a definite improvement in coördination.

The remaining diseases of the spinal cord—sclerosis of the lateral cords, diffuse chronic myelitis and chronic meningo-myelitis—will not be influenced by suspension at all, and permanent extension will also prove ineffectual. On the other hand, suspension will cause a material improvement in defective functions of the nervi erigentes which originate in the first to third sacral nerves and the center of erection, which is located in the lumbar part. In cases of paralysis after poliomyelitis acuta, it is necessary to use the corset in combination with supporting apparatus for the lower extremities, a description of which, however, would take up too much space for insertion in this article.

CONCLUSIONS.

1. The essential requirements for the successful treatment of Pott's disease, viz., extension and immobilization of the spinal column, are met in an ideal manner by Sayre's plaster of paris corset.

2. The Taylor brace does not meet either of these two requirements. It is therefore of no value in treating Pott's disease and for this reason should be discarded.

3. The extension corset acts like the plaster corset which is constructed according to Sayre's method, except that steel bars and French coutil are used instead of plaster. It fits as snug to the body as a plaster corset, and both form an outer skeleton, to the inner side of which the muscles of the trunk adhere closely. *a*. The plaster corset is preferable to the extension corset in the first stages of Pott's disease for children under 6 years of age, and its cheapness adapts it to clinical practice. *b*. The extension corset, on the other hand, can be readily adapted to the changes in configuration by readjusting the steel bars. It can be taken off with ease for constitutional treatment and at night, and it does not interfere with extensive outdoor exercise.

4. To insure the ultimate success of the treatment it is of the utmost importance that the surgeon himself adjusts the steel bars and exercises a general supervision, occasionally making such alterations in the fit as are deemed advisable.

5. The value of the discovery of Motschukowsky in the treatment of locomotor ataxia will not be appreciated to its full extent by the profession at large until permanent suspension by means of the extension corset has replaced temporary suspension.

Venetian Building.

FROM THE *Washington Star*:—"You feel very sluggish, do you not?" said the physician. "Doc," said the patient confidentially, "bein' ez yer me physician, I'll tell ye somethin'. I've been a professional pugilist in me time, an' between me an' you, that sluggish feelin' ye hear 'em talkin' so much about is gin'rally a complete bluff."

CONTINUOUS SUBMERSION IN THE TREATMENT OF INFECTED WOUNDS OF THE EXTREMITIES.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY FRED. J. HODGES, B.Sc., M.D.

CHIEF SURGEON C. & S. E. RAILWAY.

ANDERSON, IND.

Within the sound of my voice to-day are not a few of the men who have been conspicuous in their efforts to place surgery upon a rational basis; to earn for it a place among the true sciences. To such there can be no name so illustrious that its glamour can blind them to the defects of any surgical proposition or procedure, nor can I believe they will fail to consider and weigh the suggestions of even the humblest within the ranks.

Before such a body, not easily influenced by sentiment or selfish considerations, but zealous always for the best interests of our profession, I appear to briefly submit and support the proposition, that in continuous submersion we have the most rapid, thorough and reliable treatment for infected wounds of the extremities yet devised.

We are told that continuous submersion, by which I mean the submersion of a part for any considerable length of time from twelve or twenty-four hours up to as many days, has for years been very considerably practiced by German hospital surgeons and that it was introduced by them into this country at the St. Francis Hospital some time prior to 1872.

Such is undoubtedly the case, but the procedure has failed to impress itself upon the surgical literature of either country, as the only direct specific references to the practice which I have been able to find are articles by Frank Hamilton in the *Medical Record* for May 15, 1874, and in the January, 1873, number of the old Richmond and Louisville *Medical Journal*.

So far as the writer is concerned the treatment about to be advocated is original.

There came into my service in Cook County Hospital during 1888, a case which had originally been an infected (packing house) wound of the hand that had been poulticed, incised and drained. Later the forearm had been incised and through and through drainage practiced without improvement, so that when it came into my care the hand and forearm were everywhere infiltrated, swollen and sodden. The wrist joint was broken down, passive motion promptly eliciting the crepitus of denuded bone. The patient was by turns delirious from temperature, and maniacal from sepsis. He refused food and was sleepless, and exhausted to such a degree that seemingly death could not be postponed many hours. The nurses of one watch were stimulating him over to the next to escape having to lay him out. What was to be done? Amputation had been considered and dismissed by my predecessors, as necessarily fatal in his weakened condition. Every pocket and recess in the sloughing tissues had been reached and drained. The dressing had been changed from two to six times each twenty-four hours. Clearly no improvement was to be looked for in that direction. The condition seemed so desperate that I placed the arm in a continuous bath of dilute boric acid solution. In twelve hours the man's temperature had fallen from 104 to 99.5, and in twelve more he was perfectly rational and eating well. His further improvement was rapid and uneventful.

In what is known surgically as "infected wounds," there is usually present a "mixed infection." That is to say, there are present besides the pus organism, the common putrefactive germs which, working in the field prepared for them by the pus organism, add sapremia to the septicemia already existing. In either event the germs themselves are only the starting point, the seeds of the harm which the host suffers. It is only in rare instances that the bacteria in and of themselves directly harm the host, but in their growth, as the result of their life processes—their eating and drinking, we might say—they create and liberate, in the tissues of the host, a number of complex chemic substances, many of them poisonous to their host and all, at least in a degree, poisonous to themselves. Being poisonous to themselves it might be remarked, why interfere, let them stifle in their own excreta. Here the blood stream becomes an important factor. These substances acting under natural laws familiar to you all, pass readily and quickly by osmosis into the blood mass and thus not only influence the adjacent cells but those of remoter tissues, such as the heart muscle, brain, spinal cord and various nerve centers and ganglia, the integrity of which are absolutely essential to life.

The rational treatment then, of infected wounds must have as its ultimate object, 1, the prevention of bacterial growth; 2, prevention of osmosis of the ptomaines into the blood mass, commonly spoken of as absorption, and 3, such general treatment as shall counteract the pernicious effects of the ptomaines upon the vital tissues. In the past it has been attempted to secure the first results by the use in and about wounds of substances known or imagined to have a destructive or inhibitory action upon the growth of the bacteria. In the very nature of things this course could be but partially successful. Had it accomplished the desired results nothing more would have been necessary, but in point of fact, in the treatment of this class of cases in the past, the greatest dependence has been placed upon drainage and irrigation, which seek to limit or prevent ptomaine absorption. That these measures fail in a good proportion of cases, even when reinforced by stimulants and tonics, is attested by the number of deaths from infected wounds of fingers, hands, arms, feet and legs which occur in the practice of able surgeons; and the number of cases that drag on and on until, should death not occur, the patient is finally dismissed broken down in body and mind. It may seem that no one but an overconfident optimist would dare present a line of treatment with the claim that it would practically always succeed in such a dismal field, but after an experience embracing scores of cases extending over several years of hospital and private practice I come before you to-day to affirm in the most emphatic manner that continuous submersion, intelligently carried out, will in the vast majority of cases, save both the life and the limb. That submersion is a prompt and reliable measure in these cases is attested by the experience of every surgeon that has been induced to try it. How the result is produced I will attempt to explain by presenting the line of reasoning which first led to its use.

1. Many forms of bacteria will not develop at the temperature of an ordinary living room. Such as do so, develop less vigorously than at a higher temperature.

2. Many bacteria will not develop in a dilute watery medium.

3. Many have not the power of developing in strong healthy tissue but readily do so only after its vitality has been impaired by ptomaines.

4. The group of bacterial products collectively known as ptomaines are mostly crystalloids and all are capable of being influenced by osmosis.

5. Serum and substances dissolved in it, if not already within the blood vessel, will, as the result of a fundamental physical law, seek the "direction of least resistance," which in the case of a part that has been freely incised and submerged in a bland fluid is towards the fluid and away from the blood mass.

To these propositions personal experiment and experience have added the following:

6. Avoiding extremes, the temperature of the bath is immaterial.

7. The utility of the bath depends upon the fundamental physical properties of fluids rather than upon any "drug effects," hence pure water is the best fluid for submersion.

To give even the briefest synopsis of the cases treated by this method would be tedious and uninteresting, but I can not pass without relating the salient points of two histories that well illustrate points I wish particularly to impress upon the Fellows of this Academy.

An employe of our straw-board plant "infected" a slight wound upon the index finger of the left hand. The finger was industriously poulticed for two weeks so that at the end of that time, I found him with hand and forearm immensely swollen, temperature over 104, pulse 120, soft and easily compressible. Much of the time for a week he had been delirious but was at the time of my visit more rational. His physician, his friends and even he himself, considered his case hopeless. I had him conveyed at once to the hospital where, with the assistance of my friend and associate of the Academy, Dr. W. J. Fairfield, the brawny skin and subcutaneous tissues were freely incised and the arm submerged in plain water. Within four hours from the time I first saw him, I left him resting comfortably and painlessly with a temperature under 100. In two weeks he was back at work.

Early in 1891 I was called to take charge of a man that had sustained, nine days previously, a compound fracture (Pott's) and dislocation of the ankle. I found the wound full of maggots and the leg gangrenous to the knee. His temperature was 106 and pulse 130. The gangrene, of an emphysematous type, was extending with great rapidity and wishing to check its advance, improve the patient's general condition and gain time, I freely incised the necrosed tissues and placed the leg in a dilute boric acid bath. In six hours the patient was free from fever, resting well and able to take all sorts of nourishment. After keeping the leg in the bath for twenty-four hours, I amputated through discolored and emphysematous tissue, to save the knee joint, and got primary union.

In conclusion I beg to again formally submit these propositions.

1. Continuous submersion is harmless.

2. Continuous submersion will almost instantly limit infectious gangrene and control septicemia and sapremia.

3. Continuous submersion will quickly relieve the pain and discomfort of phlegmonous inflammation or cellulitis.

4. Continuous submersion will speedily reduce temperature and pulse and overcome the consequent depression of the patient's vital forces.

DISCUSSION.

Dr. H. Hatch—I want to say to the Doctor that submersion is not a new thing. It is thirty years old. When I was a boy I was accustomed, in the neighborhood where I lived, to wait on the sick whenever they would give me an opportunity. At that time there was a doctor, who is now dead, by the name of Moses Wilson, living in the same neighborhood, a graduate of Harvard, who had a boy run over by a stock cutter. This was before the time of asepsis and antisepsis, but I remember distinctly the doctor had me there for three days with a pan with the boy's foot in water all the time. He kept me pouring fresh water in and letting it run out at the other end of the pan. The boy made a good recovery. A physician wanted to amputate the leg, but the boy's father would not allow it, saying that a boy without a leg had better be dead, and the doctor pursued this plan of treatment of submerging the leg in water constantly so as to keep it fresh and clean.

Dr. Webb J. Kelly—I wish to call attention to the fact that Dr. Merz, of Sandusky, Ohio, a fellow of this Academy, has published an extensive article upon this subject and in which he illustrates his method of submersion.

Dr. L. E. Lemen—These pictures are very familiar to me in one sense of the word. They remind me of the wards of my own hospital. For fifteen years or more I have practiced submersion in all infected wounds of the character mentioned. I have had three or four tin pans made, and have one in each surgical ward in my hospital. They are about twelve to fourteen inches deep and long enough to take a leg up to the knee. In pre-antiseptic days I used to apply bichlorid or some other solution, but for the last four or five years I have used nothing but simple water, and I am satisfied that I have saved many a limb by submersion. I recall to mind a recent case. A man working in one of our smelters wounded his wrist with a piece of slag, which is brittle and sharp. He ran the slag into the wrist through the ligaments and evidently severed the palmar arch. How long he stood letting cold water run on the wrist no one knew. He could not speak English. He finally fainted from loss of blood. Some good Samaritan, a physician visiting the hospital at the time, took a piece of waste material, white cotton, and bound the wrist up with a handkerchief, and when I saw the case the bleeding had ceased. He had packed the wound with some of this waste material. I dressed the wrist. I use considerable cement in my minor surgery, but I do not want to advocate it. A few days afterward I was called to see this man and found his temperature 105.5 F. He was delirious and his arm swollen to the shoulder fully as large as his leg. Realizing that his case was a serious one as he would not go to a hospital, I sent one of my assistants to the hospital to move one of my pans to the man's residence and had his wife change the water freely. The next morning the patient's temperature was normal. We could find no pus, but subsequently two incisions were made which let out a small amount of pus mixed with lymph. If the case had been allowed to go on two or three days longer the man would have had a cellulitis, which would have involved most of the tissue of the arm. Submersion is certainly rational treatment for these wounds.

Dr. C. M. Daniels—I wish to commend the paper. I have had ten years' experience with this method of treatment. In the hospital I have charge of in the city of Buffalo, my method is identically the one mentioned by Dr. Lemen. The pans are made of tin, and I find I could not get along in a hospital without resorting to this treatment, because there are many cases of infected wounds which come to us, and it is one of the best adjuncts to our armamentarium in the hospital.

Dr. Hodges, closing the discussion—I am in no wise jealous of priority as is shown by the fact that I referred to its ancient use in the German hospitals, but considering that it was successfully used in St. Francis' Hospital in New York City, by Dr. Frank Hamilton, over twenty-three years ago, it is truly

remarkable that so valuable a method of treatment should so long have remained out of general surgical literature. That is one point that I want to bring out. I believe that each year a great many wounded people lose lives that might be saved by this procedure, and it was to bring this phase of the matter to the notice of the Fellows of the Academy that this paper was presented. I have preached submersion and recommended it for the last eight years and have made many converts. I certainly overlooked the reference Dr. Kelly made, but I have repeatedly gone over the *Index Medicus* since its foundation, as well as such other indices at my disposal, without finding other than the references I have given. This article is briefly referred to in that work on materia medica which forms one of the volumes of Wood's Library.

If through the presentation or discussion of this paper a single member of this organization who has not previously done so, can be induced to employ submersion, I shall feel that my time has been well spent.

METHOD OF OBTAINING THE BEST POSSIBLE ASEPTIC CONDITION DURING OPERATIONS DONE AT PLACES OTHER THAN HOSPITALS.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons held at Chicago, Ill., Sept. 25-27, 1895.

BY J. F. REGER, M.D.

SURGEON B. & O. RY., LITTLETON, W. VA.

Pregnant with glory as are the annals of surgery from its earliest history to the middle of the nineteenth century, illuminated as it has been through the darkness of its endless struggles by the wisdom of such men as Hippocrates, Harvey, Jenner and the two Hunters in the old world, and Physic, Mott, Morton and Gross of the new, it was left to the closing years of this century to furnish such a revolution in surgery as was never dreamed of by its most brilliant and ambitious votaries, as it was thought and taught by the most eminent authorities that ulcerating stumps, sloughing flaps, and discharging sinuses, excessive rises in temperature, gangrene, etc., were due entirely to vicious conditions of the system, humors, imperfect ventilation and poisons that were inhaled; when cleanliness was urged it was as much for cosmetic reasons as any other. When Sir Joseph Lister startled the medical world with the declaration that wounds purified or made aseptic by the use of antiseptics or germicides which destroyed microörganisms or prevented their entrance, or both, and were well drained and covered with dressings containing antiseptics and impervious to the air, would almost always, if not invariably, heal by primary intention with but little rise in temperature and with but little, if any, danger of sepsis or gangrene, he met with a storm of opposition and derision, as did Jenner when he announced that vaccination would stay the progress of smallpox, and as did Morton when he announced that ether would obtund all pain during the progress of a surgical operation. Notwithstanding all opposition the proofs were so indisputable that within a remarkably short period Listerism became an accepted fact, errors and all. The grand results obtained from operations everywhere, after his methods, were ascribed to the beneficent effects of the antiseptics used, more than to the aseptic condition obtained by the use of them. But the road once marked out, it was not long until there were numerous able reviewers each accepting the principle, but each striving to improve the methods. Operations done strictly after Lister's methods were done under a continuous spray of strong carbolic acid solutions and the frequent sponging of the open wound with the same solutions. Reports were soon published of patients who had been dangerously poisoned by the absorption of antiseptic solutions, and methods were sought by which to make instruments, wounds, and the dressings aseptic without the use of antiseptic solutions in the wound where the parts were not already affected. This is the great desideratum we hope for. The hospitals practically have it, but what of the surgeon who does 90 per cent. more operations outside of hospital than in them, who has to deal with floors, ceilings, walls and beds which are decidedly far from clean. I think that this is a wide and useful field for discussion—a field in which there is yet much to be developed, there being, so far as I have seen, no special lines or rules laid down in regard to such operations. This is why I offer to the Academy for their criticism the method I have used with slight variation for several years. I have three satchels, one large one containing instruments, basins for solutions for sterilizing the hands and a pan for sterilizing instruments by boiling. The other two satchels are of medium size, one containing sterilized dressings, ligatures, sutures, etc., the other operating gown, aprons, towels, table covers and sheets all sterilized with steam. I keep my satchel always packed ready for instant transportation and use. I wrap my dressing gowns, sheets, ligatures, towels and table cover in pieces of canton flannel, securely pinned and keep the packages in a steam sterilizer two hours. They are never opened until the instant they are to be used. Having arrived at the house where the operation is to be done I first have the floor of the operating room well scrubbed with boiling water, some scalded jars filled with boiling water, covered with pieces of canton flannel and set aside to cool; then while some of the bystanders are scrubbing the table to be used as an operating table and a stand or two for holding instruments, I select the instruments to be used including needles and place them in my pan with a weak solution of bi-carbonate or soda and set them to boiling. I then turn my attention to preparing the patient. I have his clothing changed and have him well washed with soap and water; I then have the field of operation thoroughly scrubbed and shaved. After shaving I scrub the parts with soap suds and solution of bi-chlorid 1 to 1,000 and rinse with alcohol; then wrap the parts with a sterilized towel wrung out of a solution of bi-chlorid 1 to 1,000 until ready to operate. I then select the place in the room having the best light and immediately over the spot where the table is to stand, I have a large sterilized sheet tacked by the four corners to the ceiling; I then place the table on which is a folded quilt freshly washed, if possible to obtain one, and over all spread a sterilized sheet. My assistant after thoroughly sterilizing his hands by first scrubbing them with soap and water, next with a strong solution of permanganate of potash, then with a saturated solution of oxalic acid and rinsing with alcohol, administers the anesthetic, while myself and attendants I have chosen, sterilize our hands and put on our gowns and aprons. The stand is now covered with a sterilized stand-covor upon which is laid the unopened packages of dressings, some sterilized towels and the sterilized instruments still in the boiling solution. The patient now anesthetized is removed to the table and covered with a sterilized sheet. If it be an amputation, the injured or deceased part is wrapped in a sterilized towel wrung out of 1 to 1,000 bi-chlorid

solution, the limb is elevated and stroked toward the trunk, and the Esmarch bandage applied. The needles having been threaded and placed in a vessel containing a boiling solution of carbolic acid 10 per cent., the operation is proceeded with in the usual manner, except that I do not use sponges or irrigate or wash the wound inside. I simply sponge clean and dry with pieces of sterilized absorbent gauze. After the vessels are tied and the ligatures cut off close to the knot, I pack the wound with gauze while I place the stitches; I then withdraw the gauze and bring the edges neatly into opposition and tie. If the flaps are sound I do not use drainage. After dusting with iodoform I cover the approximated edges of the wound with a strip of iodoform gauze, then a few layers of absorbent cotton and a roller bandage firmly applied finishes the dressing. The patient is then placed in a clean bed and the dressing not removed until the eighth or ninth day. The stitches are then removed and the wound dressed as before. I have done a number of operations as described, among them a double synchronous amputation of both legs below the knee. All have healed rapidly and without suppuration, and it is seldom that I apply more than three dressings.

Gentlemen, I thank you for your attention and if my paper evoke discussion which will develop something new and useful in this field it will have served its purpose well.

DISCUSSION.

Dr. Henry W. Coe—In the couple of weeks I spent about the hospitals in Chicago, I found that the permanganate of potash solution was quite frequently used at one time, but I notice now that its use has largely passed away.

Dr. Wm T. Dalby—The paper read is one of considerable importance, bearing as it does on a topic of this character. As Dr. Coe has just remarked, the permanganate of potash solution has largely died out, and the promiscuous use of the bichlorid solution is not near so frequent as it has been. In cases where we operate outside of hospitals, particularly in emergency cases, it is not only handy but more convenient for the railway surgeon to carry the things mentioned by the Doctor. Boiled water is an aseptic solution without anything being added to it, and I do not know of anything better. I do not know whether it is best or not sometimes to add to our solutions bichlorid of mercury, carbolic acid, or any of the other agents. The subject of aseptic surgery and aseptic conditions, to be practiced by the railway surgeon in conditions of emergency, is certainly entitled to careful consideration, for we may be called upon at any time to treat accidental injuries where we can not have things as we want them, and we must make the best of the existing conditions and circumstances. The Doctor's paper is a good one, and he has written on a timely subject.

Dr. L. E. Lemen—I was much pleased with the paper, and in regard to antiseptics, I presume it is simply the principle of making assurance doubly sure. Aseptic surgery is what we should practice up to the point when any wound becomes septic. Then, antiseptics come in. I have not for over two years in any of my surgery, abdominal or otherwise, used anything but boiled water and neutral salt solution, and my results have been good. In a case upon which I operated not long ago, an amputation in the upper third of the thigh, I used neither a sponge nor irrigator, simply pouring my salt solution over the stump, and doing it up. On the eleventh day I changed the dressing, and on the thirteenth day the patient was declared well. I did not use an antiseptic during the whole time. I have not for a long time used iodoform, and I will tell you why. A few years ago I used iodoform in my dressings very thickly, and instead of riding home in my carriage I took a street car. Sitting at the opposite end were two well dressed ladies, and one remarked to the other: "He has not taken a bath for a month." Aseptic surgery is what we desire to practice until such time as necessity requires antiseptic surgery.

Dr. F. J. Hodges—In the class of cases we have to deal with in railway practice the environment of the patient and the surroundings are of the greatest importance in considering what is absolutely necessary to do in any given case. In an open country, where the railway surgeon is often called upon to practice his vocation, very little attention to these details will secure perfect surgical results, and cases have come to the notice of all of you in which the most important and careful operations have been performed with seemingly no attention having been paid to asepsis, and yet typical results have followed. I do not say this in a way to disparage the practice of aseptic surgery, or that aseptic precautions should not be taken, but if the loss of time is too great it is better to give the patient the advantage of the operation with such surroundings and means as you can secure, particularly in very closely and thickly populated sections of the country.

Dr. C. M. Daniels—I think the subject is one to which we ought to pay a great deal of attention. It is simply the final closing up of the wound, especially in amputations, and it means more attention than the primary preparation. The Doctor has very well outlined the method of preparing the room, the instruments and the patient, but I think previous to the application of the dressings that the last thing done in the way of thoroughly closing the stump is the most important of all, so far as the avoidance of sepsis is concerned. I quite thoroughly agree with Dr. Lemen in regard to the use of chemicals upon open surfaces, and I have abandoned their use. I do not believe it is necessary to use a chemical, not even bichlorid, iodoform, or anything else when you can secure thoroughly sterilized water, water that has been boiled in a clean receptacle with which the wound may be flushed at the last moment. I have a stream of water pouring into the wound the last thing before applying the dressing, when everything is aseptized. We close up the stump with such means as we always have at hand. Boiled water in a clean receptacle is the most important thing in the whole operation so far as avoiding sepsis is concerned.

Dr. L. E. Lemen—I would like to call attention to the use of the irrigator. I have found since I have abandoned the use of the irrigator that I have union by first intention a great deal oftener—in fact, it is exceptional that I do not have it. At an elevation of four feet, the water coming through the ordinary syringe, striking the cut surfaces of our muscles, the irrigator does far more damage than we have any idea of, and instead of using it I use a large mouthed pitcher, gently pouring from it over all the surface. I do not daub my wound with sponges, lint, or anything else. With proper hemostatic forceps bleeding can be easily controlled. I rarely use them in major operations. I know where the location of my bleeding points is, and I ligate them before I remove my tourniquet. I have had much better results since I have abandoned the old fashioned fountain syringe, as I believe that we do violence to the cut muscular fiber by forcibly ejecting water against it.

Dr. C. M. Daniels—That is my method of irrigating wounds. In amputations of the thigh, I turn the thigh up and merely flush it out, instead of making pressure.

Dr. Wm. T. Dalby—While we are on the subject of antiseptics I would like to ask whether or not any member has used acetanilid in dressing surgical wounds.

Dr. Elisha Griswold—At the meeting of the American Medical Association, held in San Francisco last year, I heard a paper read by an assistant surgeon in the Army, whose name I can not at present recall, on acetanilid as a local application, or as a substitute for iodoform, and which he recom-

mended very highly. Shortly after the meeting I had occasion to dress a contused wound of the hand with it. The patient was a workman in a blast furnace. I washed the wound carefully at first in order to remove all of the septic matter, and I thought I had gotten it all out of the wound. I then sprinkled the acetanilid over it according to the directions given by the gentleman referred to. The result in that case was the development of an erysipelatous inflammation. I converted the wound into an ugly condition, so that it took the patient three or four times as long to get well as it would have done if the wound had been dressed with gauze, iodoform, or subcarbonate of bismuth. The latter has no odor and is as good as iodoform in its results. After adopting the method suggested by this gentleman I was discouraged, and I have not since applied it on a wound. I have tried it on small wounds, and I find that it acts as an irritant.

A MEMBER—Was the wound very much contused?

DR. GRISWOLD—It was not very much contused. It was a lacerated wound on the back of the hand and not a very large one, but an erysipelatous inflammation developed over the back of the hand as a result of the use of the acetanilid. After using it several times subsequently in smaller wounds, I thought the doctor who recommended it had made a mistake.

DR. REGER (closing the discussion)—I believe there is no difference between myself and my critics. I have not for several years applied antiseptics to the inside of a wound, as the paper alleges. A man is brought to you, we will say, with his limbs crushed and covered with cinders, dirt and grease, and the only place where I would use an antiseptic is in preparing the part for amputation. In crushed wounds you will always find to a greater or less distance from the wound that the tissues are entirely devitalized, and consequently with a few exceptions the surgeon can make his amputation through sound tissue. I do not irrigate. I use sterilized gauze sponges and if there is any oozing of blood after the surface is closed it must be aseptic and must absorb harmlessly. I use all my antiseptics prior to the operation. I take everything along with me to make my operation as nearly aseptic as I can. The sheet is for the purpose of preventing any particle from falling into the wound.

VAGINAL LIGATION OF THE BROAD LIGAMENTS FOR FIBROIDS OF THE UTERUS AND OTHER MINOR SURGICAL TREATMENT.

BY FRANKLIN H. MARTIN, M.D.

PROFESSOR OF GYNECOLOGY POST-GRADUATE MEDICAL SCHOOL, SURGEON TO WOMAN'S HOSPITAL.

CHICAGO.

Vaginal ligation of the contents of the base of the broad ligaments, for the cure of fibroids of the uterus, was devised and performed by me as a new and original operation Nov. 15, 1892, and was described and published in the April number of the *American Journal of Obstetrics* in 1893. In the January number of the *American Journal of Obstetrics*, 1894, I reported six cases treated by the new operation.

The operation as originally described by me is as follows: The ligation of more or less of the broad ligament of the uterus, with its vessels and nerves, the extent of the ligation depending upon the result sought, from a simple ligation of the base of the ligament, including the uterine arteries and branches of both sides without opening the peritoneum to a complete ligation of the ligament of one side, including both uterine and ovarian arteries, with partial ligation of the opposite ligament without opening the peritoneal cavity, if possible, but by doing so if necessary.

The results sought in the operation are, first to check uterine hemorrhages by cutting off blood channels, and secondly to produce atrophy of the fibroid by, 1, depriving it of nourishment through the blood vessels and, 2, by changing the nutrition of the uterus by interfering with its nerve supply.

Immediately after publishing my first article on this operation there were two claimants for priority; Dr. Walter B. Dorsett, of St. Louis, and Prof. S. Gottschalk, of Berlin, Germany. Dr. Dorsett, in a letter to the *American Journal of Obstetrics*, claimed that he had suggested a similar procedure to my operation in an article he published in the St. Louis *Courier of Medicine* in 1890, the article bearing title of "A Case of Atrophy of the Female Genitalia following Pregnancy and remarks." In this article he made the following observation: "I believe that in the treatment of uterine fibroid . . . to ligate the uterine artery would not be an unscientific procedure. On the contrary the more I have thought of it the more I am inclined to believe that it would be the most certain mode of treatment." Dr. Dorsett, while advancing the theory, had not at that time carried it out on a living woman.

Prof. Gottschalk based his claim of priority on an article read by him at the Brussels Congress, Sept 16, 1892, with the following title: "Die Histogenese und Aetiologie der Uterusmyome." In the latter paragraphs of this article he casually suggested ligation of the uterine arteries and stated that he had performed the operation twice. This is what he said: "The bilateral ligation of the uterine arteries appears to be the therapeutic measure in this regard for the earliest incipient stages of myoma. This offers no difficulties in its technique; it is easily performed in a few minutes. . . I have already performed this ligation in two cases in which I was able to early diagnose the development of multiple myoma with best results."

Thus these two men both suggested tying the uterine arteries for the cure of fibroids and at least one of them (Gottschalk) performed the operation twice before I described my operation. This would definitely decide the question of priority in their favor if the operation they suggested was identical with mine. Their operation is not identical in theory, in execution, or in description with mine, and therefore their claim of priority for my operation can not be substantiated.

The operation suggested by these men simply includes the ligating of the uterine artery from the vagina, while, 1, I ligate in all cases, the whole base of the broad ligament, in order, *a*, to occlude not only the main channel of the uterine artery, but all collateral branches; *b*, in order to destroy the function of the nerves as well as the arteries of nutrition; *c*, in order to diminish nerve reflexes. 2. I include, in desperate cases, not only the base of the broad ligament with the uterine artery and branches in my ligatures, but when practicable ligate high enough on one side to take in the ovarian artery. 3. I advise accomplishing this result, if possible, without opening the peritoneal cavity, but by doing so, if necessary.

TECHNIQUE OF OPERATION.

The preparation of a patient for vaginal ligation of the broad ligaments of the uterus should be similar to that demanded for vaginal hysterectomy, as

described in my article last week. Ether is used as an anesthetic and the patient is placed on the operating table in the exaggerated lithotomy position with buttocks brought to end of the table, with an assistant on either side to support the limbs and hold the vaginal retractors. A broad, short vaginal retractor above and below exposes the cervix, which is transfixed with a strong silk ligature to be employed in handling the uterus. The uterine canal is dilated and the uterine cavity curetted with a dull curette and thoroughly irrigated with 1:1000 bichlorid solution and then loosely packed with iodoform gauze. This procedure cleans the uterus and makes it impossible for the vaginal wounds to become infected by a septic uterine discharge. The uterus is now drawn down in order to put the broad ligaments on the stretch and then drawn to the right side so as to expose the left vaginal vault. The mucous membrane of the vagina at the utero-vaginal fold on the left side is then caught with a tenaculum and incised with a pair of curved scissors. One blade is allowed to enter beneath

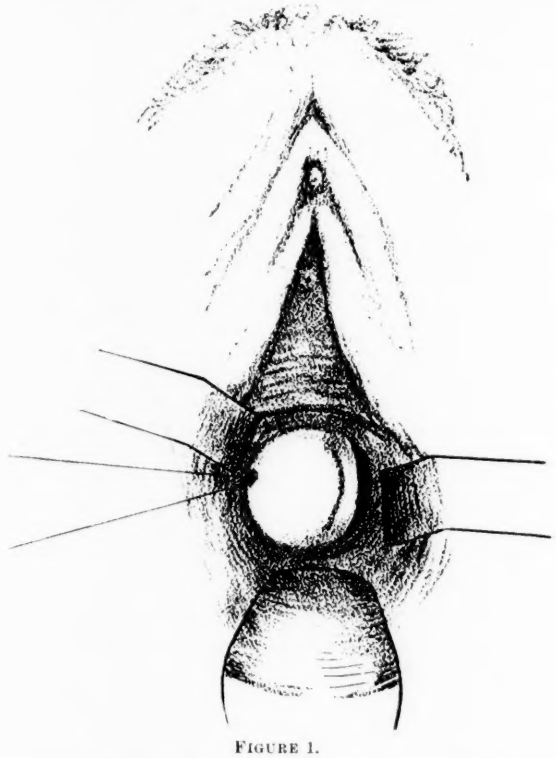


FIGURE 1.

the mucous membrane and a curved incision one and one-half to two inches long is made over the broad ligament and at right angles to it (Fig. 1). By means of the index fingers of the two hands the operator now separates the vaginal tissue from the broad ligament and carefully separates the broad ligament in front from the bladder for a height of two inches and laterally for nearly the same distance (Fig. 2). The bladder should be carefully separated in this way in order to avoid the danger of wounding the organ, and by pushing the separation laterally the ureter is forced out of danger. One then carefully separates the broad ligament posteriorly to the same height as in front, without, if possible, penetrating the peritoneum. Now, by passing one finger behind the other in front, the whole base of the broad ligament, representing two-thirds of its bulk, can be grasped (Fig. 3) for a distance of an inch to an inch and a half from the uterus. In this grasp one can easily feel the throb of the main trunk of the uterine artery and occasionally several branches. The curved pedicle needle is then passed, armed with No. 10 silk, strong pyoktaninized catgut or kangaroo tendon, and guided by the index finger of the left hand (Fig. 4) is made to penetrate through the broad ligament. The ligature is drawn through, the needle removed and the base of the broad ligament is thoroughly ligated at a distance of one inch or more from the uterus. The ligature is cut short, leaving it buried in the tissues of the ligament. The other broad ligament is treated in the same manner; the vagina is well sterilized with bichlorid solution and the vaginal incision accurately approximated with fine antiseptic catgut so as to completely bury the broad ligament ligatures (Fig. 5). The handling string is now removed from the cervix, and the end of the gauze strip packed in the uterus is tied to another strip and the vagina is filled loosely with a gauze drain.

The after treatment of these cases is very simple. The vaginal and uterine gauze is removed the second

FIGURE 2.

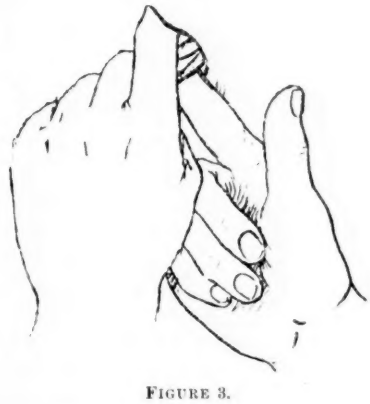


FIGURE 3.

or third day, and twice a day thereafter a bichlorid vaginal douche 1:2000 followed by plain douche are given. Figure 6 shows the position of ligatures when only the base of the broad ligament is ligated.

SELECTION OF CASES.

Interstitial fibroids of the uterus of moderate size are the cases in which the best results will be obtained by this operation. Subperitoneal fibroids springing from the fundus of the uterus especially would scarcely be benefited to any great extent by depriving the lower part of the uterus of its nourishment. Neither would one expect to obtain any lasting benefit from this operation in cases of pedunculated submucous fibroids. On the other hand, in true interstitial growths depending upon the whole uterus for their nourishment, cases where the tumor is the uterus, and these represent 75 per cent. of all fibroids of the uterus, wherever it is possible to tie the base of

the broad ligament from the vagina, this operation may be expected to accomplish prompt and decided relief of symptoms and a rapid reduction of the tumor. The cases in which the most satisfactory results must be expected are incipient or small fibroids of the interstitial variety which show themselves late in the menstrual life. Here, we have a uterus which is small enough so that it has not risen above the brim of the pelvis, one which can be easily reached from the vagina so that its broad ligaments are accessible from below. Such a fibroid, too, from the age of the patient will reach a state of quiescence as soon as the menopause is established. In such cases, then, a major operation is particularly undesirable, because it is not imperatively demanded and because of a reasonable chance of relief at the approaching change; on the other hand the symptoms (with severe hemorrhage usually as the principal one) are such that immediate relief is earnestly sought, if one can be reasonably certain of obtaining it without submitting to a dangerous and radical procedure. These are ideal cases for this operation.

Another class of cases in which this operation has been employed with gratifying success and in which it will probably find favor with the most radical operators, are those of continuous and profuse hemorrhage in which the desperateness of the drain is such

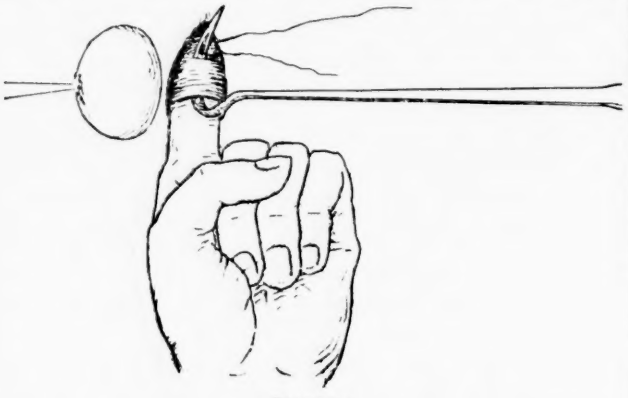


FIGURE 4.

that the patients are depleted to such a degree, that no radical procedure can be thought of, until a minor operative procedure has checked blood waste and recuperation is accomplished. My fourth and sixth cases were like the above. In the fourth case hemorrhage was very profuse and the patient was completely exsanguinated and so weak that she had not been out of bed for several months. Some time before I determined to submit her to my operation an attempt had been made to remove the appendages, or, if possible, when the laparotomy was in progress, the uterus. From complicated adhesions and the weakness of the subject neither operation was possible after the abdomen had been opened. The tumor was large and the elevation of the uterus in consequence was great, and it was with the utmost difficulty with the aid of the most competent assistants, that I finally succeeded in ligating thoroughly the base of each broad ligament. Both ligaments contained several arteries, some of them as large as the normal radial artery. They were all tied in mass. Hemorrhage stopped from the instant of tying the last ligature and it has never recurred. It has now been over three years since I operated on this case. The uterus has reduced until it is but slightly larger than normal. The woman (I examined her but a few months ago) is perfectly well. She has a slight menstrual flow each month, and is free from pain.

Case six was of a severe hemorrhagic nature in a typical interstitial fibroid of three by five inches in diameter. The woman was too weak and depleted for a radical operation. I did my operation on her and the result was marvelous. In three months' time she had recuperated so that any radical operation might have been done without danger.

Dr. Humiston, of Cleveland, reported to me a case in which he used my operation as a procedure of last resort, in a patient nearly moribund from hemorrhage. She was so weak that he only attempted ligation on one side. The woman stopped bleeding instantly and eventually recovered. Hence, the operation may with propriety be employed as a rational temporary expedient in desperate cases of whatever variety, where uterine blood loss is conspicuous.

CASES.

In selecting cases for this operation I have been very careful. In the majority of them I have operated on, there seemed no alternative. All were desperate ones, like cases 1, 2, 3, 6 and 8, or they would not submit to a more radical procedure, and milder means, as electricity, ergot, etc., would not accomplish satisfactory results. I have been more conservative in adopting the operation, I am afraid, than the results in the few cases I have operated on would justify. One reason for not adopting the operation in a larger number of cases is that I wished first to learn of the remote results. It is now over three years since my first operation and most of the operations which I have performed were during the first year. I have,

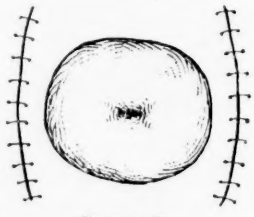


FIGURE 5.

therefore, a three years' history to analyze in the majority of my cases. In the following report there are no instances in which, at least, a year has not elapsed since the operation.

Case 1.—This was an interstitial fibroid in a maiden lady 36 years old, in size extending above the umbilicus. The hemorrhage was exhaustive and the patient greatly reduced in consequence. Her heart was hypertrophied and her condition was such that no surgeon with a proper care for his statistics or his patient's life would have ventured a hysterectomy. She was operated on by my operation Nov. 15, 1892. The hemorrhage decreased about one half for several months after the operation. The tumor in the first four months materially decreased in size. In May, 1894, the hemorrhage is reported much modified, and no longer a source of alarm. The patient at that date considered her condition greatly improved, hemorrhage cured, tumor materially reduced and pressure symptoms subsided. March 12, 1896, four years and three months after the operation the patient reports herself well. The original fullness produced by the tumor she can no longer feel. No pain. The last flowing of any consequence was November, 1894. Since then the flow has been very slight until last July, when it practically ceased. "I have color in my lips and cheeks. I walk two miles or more every day," she writes. This report is certainly very gratifying.

Case 2.—The second case was a married woman 40 years of age who had been under electrical treatment for a hemorrhagic myofibroma of the uterus. The galvanism decreased the size of the growth but did not materially lessen the exhaustive hemorrhage. The tumor was of the interstitial variety and

the uterus appeared the size of a three months' pregnant uterus. When the patient entered the Woman's Hospital for operation December, 1892, she had been having almost continuous hemorrhage for several months. Upon exposing the uterus with the retractors at the time of the operation, the cervix was large, blue and vascular. As the vagina was large the operation was very easily executed. The ligature on the left side included fully two inches in width of the broad ligament at a distance of at least an inch from the uterus. When I tightened this first ligature one of the spectators, a well known gynecologist, called my attention to the fact that the cervix had perceptibly paled in appearance. The broad ligament was easily exposed on the right side, and fully as much of it ligated as on the left. If there had been any doubt of the procedure affecting the vascularity of the uterus, it vanished when the second ligature was tied. The cervix immediately paled until it was nearly as white as a piece of cartilage.

The covering of the broad ligament was so loosely attached in this case that I could easily feel the main channel of the ovarian artery, and it would have been an easy matter to have included it in the ligature.

After over three years I can promise this case a perfect cure. The uterus has reduced to normal size. The hemorrhage has ceased completely. All pain has disappeared. A slight menstruation, normal in quantity, occurs each month. The patient's health has improved so that from a state of almost complete invalidism she is transformed into to a strong healthy

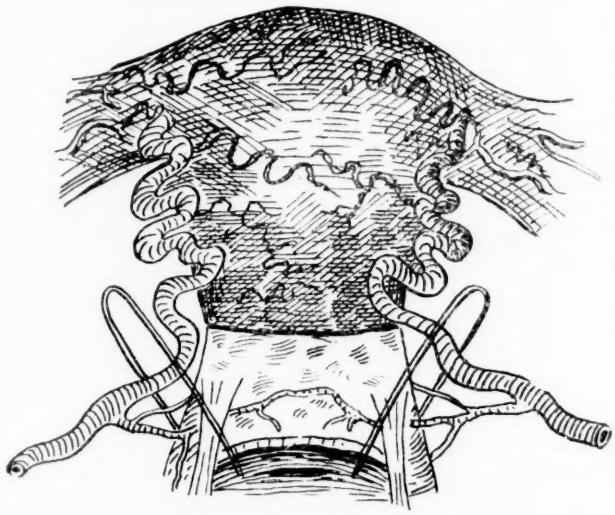


FIGURE 6.

woman. The improvement has been progressive from the day of the operation. I have seen this case within the month (March 1896).

Case 3.—This patient was operated on in January, 1893. She had an incipient interstitial fibroid of two years' standing which was profusely hemorrhagic in nature. I tied the base of both broad ligaments including the uterine arteries and their branches. The relief was immediate. The menstruation for the next four months was scanty. The patient gained in health and strength rapidly. The tumor, which was the size of a four months' pregnancy at the time of the operation decreased markedly in size within three months. Four months after the operation I lost track of this case, as she lived in a distant State and neglected to keep me posted. Her last letter gave a report of perfect health.

Case 4.—This patient had a large, bleeding fibroid filling the pelvis, which extended to the umbilicus. The uterus and appendages were firmly adherent and immovable. Laparotomy had been attempted on the case, with the object of removing the appendages or the tumor. The abdomen was opened, but the adhesions and unusual complications rendered it impossible to remove the tumor or even accomplish the oblation of the appendages. The patient was so unusually reduced from loss of blood at the time of my operation that she had not been able to be out of bed for three months.

I operated on the patient in January, 1893, at the Post-Graduate Medical School of Chicago. The operation was accomplished with great difficulty because of the large size and immovability of the uterus. Finally, however, after consuming more than an hour in time I succeeded in ligating thoroughly the two broad ligaments well above the uterine arteries and their branches.

In June following I made the following report on the case: "The flowing ceased immediately and the patient was relieved of her drain for over two weeks. She then had a few days' flowing, which resembled an ordinary menstruation. She has rapidly and steadily improved since that time. She has menstruated regularly but scantily, and without pain. She can at this time (June, 1893), five months after the operation, attend to her duties as a housewife, and considers herself cured. The tumor has become reduced in size until it is no longer noticeable as a deformity, and so that the patient herself is no longer conscious of its presence."

Since the foregoing report was written in June, I have seen this patient several times, the last time within the month. The patient was then examined by several physicians, one or two of whom on independent examinations, failed to notice any abnormal enlargement. The uterus is still somewhat larger than normal, but is not more than three or four inches in diameter, while the testimony of at least three experienced diagnosticians will bear me out in the estimate that its former diameters were not less than four and a half by eight inches. The patient is in good health now, Jan. 1, 1895; menstruation is regular but scanty, and she is free from pain. The patient, so far as I know, has remained well.

Case 5.—This case was a woman with an interstitial fibroid about three by five inches. She was about 30 years of age, and the growth had been noticed for three years. Her principle symptoms were profuse menorrhagia with severe menstrual pain. The case was referred to me by Dr. F. H. Greer, of Columbus, Neb. I did my operation on the woman Jan. 8, 1893. She had a little subsequent temperature, and one month after the operation the ligature sloughed from the left broad ligament. Four months after the operation Dr. Greer reports the woman well. "Menstruation scanty, no pain. Fibroid diminished in size until the uterus is about normal. Patient claims that she is cured." This report was made in June, 1893. I have been unable to get any history subsequent to that date.

Case 6.—This was the wife of a physician of more than ordinary ability and reputation. The patient was about 36 years of age, slightly above the average height, with well-proportioned frame, but poor in flesh, with a skin blanched and a body almost exsanguinated. The uterus was about the size of a three months' gravid uterus. The tumor was uniform and evidently interstitial. The uterus was in normal position. The cervix was nearly two inches in diameter, the os patulous.

The history of the growth dated back, undoubtedly, several years. The patient had borne no children. The menstruation had for nearly two years increased in quantity and duration, until now, while coming with absolute regularity, it lasted fifteen days, and that in spite of vaginal and uterine tampons, the recumbent position, ergot, hydrastis and the rest. She flowed each month until she was completely exhausted, scarcely recovering in the next thirteen days sufficiently so that she could assume the upright position without fainting. Accompanying this unusual discharge was uterine pain, which in its severity brought the patient to the point of unconsciousness. During the four days in which the woman could drag herself around in the latter part of each intermenstrual period she did so with the greatest discomfort on account of the pressure and neuralgic pains of the pelvis. Upon examination of the broad ligament from the vagina the finger could detect on either side the large, pulsating artery as it fed the tumor. The latter was movable, the appendages apparently normal, the broad ligaments accessible. In fine, here was an ideally typical case—a hemorrhagic fibroid of the uterus, a bed-ridden patient, an authentic diagnosis, an unusually interested physician to carefully watch and estimate the result, and one who enthusiastically demanded a trial of the new operation. Under the circumstances it seemed to me that much depended upon this case, as though the fate of this operation must necessarily be more than usually linked with this particular patient.

I operated on this case Aug. 2, 1894, at the Chicago Hospital, with Dr. Robert Dodds and Dr. Oksschet as assistants. The left broad ligament was carefully dissected from the peritoneal covering behind, and from the bladder in front, until fully two-thirds of it could be grasped by placing one finger behind it and another finger or instrument in front of it. When grasped in this manner several beating branches of the uterine

artery, together with the main artery itself could be detected. This entire mass was then ligated in two sections with No. 12 braided silk, the silk cut short, the parts irrigated and the vaginal wound closed with catgut. After treating the opposite side in the same manner, the vagina was cleansed and loosely packed with iodoform gauze. When the operation was finished the throbbing arteries, which could be distinctly felt before, could no longer be found. The cervix, which was large and purple previous to the operation, became pale and cartilaginous in appearance as soon as the ligaments were secured.

The patient remained in the hospital three weeks. The first menstruation was due the day following the operation. It began the next morning, but was so slight and painless that the patient would not believe that it was her menstruation until several days had elapsed and no other flow appeared. It lasted about three days and was barely perceptible; absolutely no pain. The after treatment consisted in vaginal douches after removing the gauze, light diet and the recumbent position for two weeks.

August 30, the second menstruation reappeared; there was a little of the old pain, but not sufficient to require anodyne of any kind; the flow was half the usual amount and lasted six days. September 28, the third menstruation appeared; the amount was normal in quantity, lasting but four days; the pain was slight. October 26, the fourth menstruation appeared; the amount normal in quantity, lasting but four days; the pain was slight. The patient was seen and examined by me just before the last menstruation. She had gained several pounds in flesh, her cheeks and lips were red and she was a picture of health and robustness. Her feelings were in accord with her appearance, as she enthusiastically assured me that she felt perfectly well. On examination I found the uterus was reduced in size. It was little, if any, larger than normal. Its bulk had decreased one-half. The cervix was small and normal. No arterial pulsation could be felt in either broad ligament or around the vault of the vagina.

The next report I received was in January, 1894: "I have to report," the husband says, "that Mrs. X. menstruated from December 19 to 24. That the amount was above the same as before, *i. e.*, slightly above the normal. Pain rather excessive for two days (possibly due to rheumatism and neuralgia). After flow had ceased I examined and found ligature in vagina and also small sinous opening to left side of cervix. Since then there has been slight discharge from same. She had been suffering some pain at that point, no pain since ligature came away." He adds enthusiastically: "Taken all in all, the result so far is a grand success." Jan. 17, 1894, he writes: "Mrs. X. is up to-day (the fifth day) after the easiest menstruation she has had in her life; pain moderate and on one day. This in face of the right side still discharging. In the next two months I expect to have a well woman. The uterus is now practically normal."

I have lost track of this patient entirely, and I regret that I am unable to complete so interesting a history. If the husband of this patient should read this report I hope that he will communicate with me.

Case 7.—Mrs. S., Denver, Colo., aged 35, uterus about double the normal proportions, containing two or more centers of development and an extremely hemorrhagic tendency, was the seventh case operated on. The case had been treated unsuccessfully by curettement, electricity and the ordinary remedies for checking uterine hemorrhages. The uterus was retroverted but free from adhesions. The patient was prepared carefully, and at the Woman's Hospital, on Nov. 11, 1893, I ligated the base of both broad ligaments, and shortened the round ligaments. The uterus was drawn well down, and each broad ligament, after incising the mucous membrane covering them in the vault of the vagina, was dissected free from the bladder and rectal attachments and then ligated with two strong ligatures. These ligatures were placed high enough to include the uterine artery, all its branches, and all of the contents of the base of each broad ligament. The ligatures were cut short after they were tied, the mucous membrane of the vagina was reunited with a running catgut ligature, and the vagina packed with iodoform gauze. The round ligaments were then shortened and the uterus left in a position of anteversion. Three days later the gauze was removed from the vagina, an antiseptic douche was given and a Smith-Hodge pessary was inserted. The antiseptic douches were then continued daily. The first menstruation was due four days after the operation. It did not appear. The second menstruation also failed to appear, notwithstanding the fact that menstruation had ordinarily been exhaustive.

One of the wounds caused in the operation for shortening the round ligament suppurated, and obliged the patient to remain in the hospital until the latter part of January. Dizziness was complained of about the time when the menstruation was due. This symptom continued with different degrees of severity for some time, gradually disappearing. February 13, three months after the operation, the first flow appeared. The patient writes: "First menstruation came on the 13th of this month, without pain, but quite profuse for first two days. Since then has continued, including to-day (the 18th). Discharge light."

March 19, 1894, the patient reports: "Am feeling fairly well this month. Had pain in back with last menstruation, which commenced March 13. First three days quite profuse; last four days very little. No dizziness this month." April 18, she writes: "Menstruation came on four days in advance of schedule time; continued one week. Am in fairly good health."

December 14, 1895, two years after the operation, the husband writes that his wife suffers considerably with vertigo, especially severe immediately before menstruation. "The operation performed by you has in a measure been successful, as the menstrual discharge is much less than before the operation and the womb is in much better position."

March 26, 1896, the husband writes: "Her menstruation is not profuse and she has less pain; her general health about the same" (as in her last letter). "I think the riding of the bicycle improves her general health and strengthens her in those parts wherein she is weak."

Case 8.—Mrs. Z., Muscatine, Iowa. About 35 years of age. No children. Multiple fibroid of the uterus approximating in size a four months' pregnancy. Hemorrhage profuse, followed for a week by excruciating pain. Patient became extremely exsanguinated at each menstrual period. Frequently the flowing would last for two weeks. The uterus had been curetted. Electricity failed to control the hemorrhage and only partially modified the pain. The irregularity of the uterine canal undoubtedly accounted for the failure of the electricity. Nov. 28, 1893, the patient submitted to my operation for ligation of the broad ligament. The tumor was developed more to the left side into the left broad ligament. I succeeded in separating the broad ligament for a height of two inches. On the right side a large double ligature was employed, while on the left side first a double and finally a second one higher and farther away from the uterus was applied. The ligatures were cut short, the vaginal vault closed with catgut and the vagina packed with iodoform drain. The first menstruation was due three days following the operation. A slight watery discharge occurred instead of blood. Two days following the operation the patient complained of pain similar to that which ordinarily occurred after menstruation. Feb. 1, 1894, the patient's husband writes: "She commenced her menstruation January 25, and it was continued until to-day, February 1, one day less than last time. Had one day of some pain; not bad. She is getting stronger and can get around the house without being very tired, although

she has not yet ventured out." February 26, the report is: "Mrs. Z. was sick this time six days, the same as last time. Had considerable pain two days which was very severe, the same as she complained of before the operation. She is getting along very nicely. She is now able to go out, and takes a walk every day." March 26, the husband writes: "I am ready to make another report, but not as good a one as I would like. Mrs. Z. was sick on time and the flow was very little compared to what it has been, lasting but three days, but she had a great deal of pain—some before she was sick, and it was quite bad for two days after the menstruation. . . . Everything seems to be working very well if she could only get rid of that pain." April, menstruation still decreasing in quantity; the pain decreasing. "There was one day of pain," the husband writes, "and the flow amounted to but very little." May 6, he writes: "Mrs. Z. has been feeling splendidly all this last month. Last week was her time to be sick again. The flow did not amount to anything, just enough to show. . . . In regard to her general health, it is excellent. Eats well, sleeps well and goes out every day the same as other women. Has gained her natural amount of flesh and a little more." I examined the patient May 19. The uterus was reduced in size one-half. Patient in perfect health.

March 13, 1896, two years and four months after this woman's operation, I received the following report from this patient: "Since the operation I have gained twenty pounds or a little more up to date. My menstruation period is about one-half the time and amount it was before the operation. The pain is very much less than I had before the operation, but it has not left me altogether. . . . I have the strength of the average woman now, while before the operation I was compelled to be in bed over half the time. Between my menstruations I enjoy as good health as any one could ask. . . ."

Case 9.—Mrs. C., aged 41, a resident of Iowa, consulted me for a bleeding painful fibroid of the uterus in May, 1894. The tumor was interstitial, uniform in contour, enlarging the uterus to the size of a four months' pregnancy. The hemorrhage at menstruation was profuse and lasted six or eight days at a time. The menstrual periods were accompanied with considerable uterine contractive pains. The patient complained of a great deal of heaviness in the pelvis and pains caused by the pressure of the tumor. The patient was weak, rather exsanguinated and nervous. I concluded that the case was a suitable one for my operation. The operation was done May 19, 1894. The lower portion of the uterus was so large and filled the pelvis so completely that it was with a great deal of difficulty that I accomplished the satisfactory ligation of both broad ligaments. However, when the operation was finished I was well satisfied that both uterine arteries had been thoroughly shut off.

The patient improved from the first. There have been no more hemorrhages. I have examined the patient two or three times since the operation, once within six months. The tumor has decreased in size, but has not disappeared. The pains and pressure symptoms are much better. The woman is apparently a healthy woman and does very much as other healthy women. In reply to my letter of inquiry she said March 12, 1896, one year and six months after her operation: "Since the operation I have had but few hemorrhages, while previous to that I had them very frequently. I am now quite regular, though I never go to my full time—about three weeks. I have less pain, but the heaviness still remains. I am better in health and strength than before the operation."

Judging from my other cases I expect this woman to gradually recover. My fear was, when I adopted this operation, that collateral circulation would speedily overcome the result of ligating of the blood supply. Experience, however, shows that the results of the operation are greater the farther away from the operation we get.

Case 10.—Mrs. S., aged 35, a resident of the central portion of the State, came to the Woman's Hospital in August, 1894, to consult me about an interstitial fibroid. She had borne no children. The uterus was large, regular in contour, hard, and about four by six inches in diameter. It was freely movable in the pelvis. The woman gave a history of severe monthly hemorrhages which lasted anywhere from six days to two weeks at a time. Accompanying the flooding were severe contraction pains. The woman was bloodless, pale, weak and extremely nervous. In all other respects she was normal.

I did my operation on the case in August, 1894, with the assistance of the house staff of the Woman's Hospital. It was easily performed on account of the movability of the tumor and the looseness of the broad ligaments.

September, 1894, the patient wrote: "It is now six weeks since I have menstruated. The previous pains are not any better. My bladder trouble (pressure) is much relieved." October, 1894; "I have menstruated since my last letter. The quantity and length of time was small. Had a good deal of pain the first two days."

November 13, 1894. "Menstruation three weeks apart. I flowed more than usual."

December 17, 1894. "Pains some less. My changes came at the correct date, but was greater in quantity than it should have been."

January 29, 1895. "I flow a great deal more than I think I ought. I have to change my napkins six or seven times a a day."

March 25, 1895. "I was a little better my sick week this month. The flowing did not last so long as it did before my operation, but more than is right. My pains are gradually improving."

May 27, 1895. "I flowed very freely and had a great deal of pain this month."

Case 11.—Mrs. Y., the wife of a very intelligent physician of Indiana, consulted me in November, 1894. She had an interstitial fibroid about the size of a four months' pregnancy. She was 43 years of age. I operated on her Nov. 7, 1894. Both broad ligaments were tied, so as to include two-thirds of their bulk. This occluded the uterine arteries on both sides with all their anomalous branches. I have seen this patient several times since her operation and the uterus is gradually lessening in size and the patient's symptoms are subsiding. I expect this case to prove successful with a little more time. In reply to a request from me for a statement of progress, the husband writes March 12, 1894, a year and four months after the operation, as follows: "My Dear Doctor:—In reply to yours of yesterday, I have to say that my wife, on whom you operated Nov. 7, 1894, is doing very well as far as the fibroid is concerned. It has decreased in size some, not a great deal. The menstrual flow on two occasions was quite profuse, but the last two periods have been very scanty only lasting three days, and only using one or two napkins in a day, whereas before the operation she used eight and ten each day for four or five days. She suffers very little pain, in fact none for the last month. Before her operation she suffered constantly. Her general health has greatly improved, and she has gained ten pounds in flesh, is much more cheerful, and in fact improved in every way. . . My wife is now past 45 years of age, and I believe if the tumor does not increase in size until after the menopause, she will entirely recover."

Case 12.—Miss V., single, age 40, consulted me in November, 1894, on account of a painful bleeding fibroid. She was depleted to an unusual state, and her nervous system was a wreck. She had an interstitial fibroid with the canal of the uterus measuring four inches in depth. The uterus measured approximately three by six inches in diameter. The organ was movable. Hemorrhage occurred only at regular menstruation periods. At this time it lasted a week or ten days and was very profuse. Accompanying the flow was great prostration of the patient and also most excruciating pelvic pressure symptoms. This condition of affairs had been going on for months until the patient from blood drain and harassment of pain had been brought to a deplorable state of health.

March 5, 1894, I ligated the base of both broad ligaments. The operation was accomplished with ease because the uterus was movable and the broad ligaments loose. The patient recovered nicely from the operation. The next two or three menstruations were much more normal, the quantity of flow being very small and the pain scarcely perceptible. The woman was placed on tonics and urged in every way to increase her blood supply. Her nervous system reacted slowly. Her menstruations later became more profuse and was accompanied on several occasions by quite severe pain. While but a short time has elapsed since the operation the patient is gradually improving.

March 12, 1896, one year and three months after the operation, she writes: "The amount of menstrual flow averages

about one-half the amount it was before the operation. Have gained a little in flesh. Have considerable pain. Still have nerves although under better control than formerly."

This patient has improved in many ways. During her intra-menstrual periods she is comparatively well and is able to go about and to do more work than she should attempt, whereas previous to her operation she was unable to do much. While she had been neglected for a long time and her health had reached a low ebb, I can not but believe that she will gradually improve as a direct result of the diminished flow. Her tumor decreased in the first four weeks fully one-third. It has not increased perceptibly to the patient since she left my care.

Case 13.—Miss B., age 26, consulted me in January, 1895, for a bleeding intramural fibroid. The uterus was about five inches long and had a canal three and three-quarter inches in depth. The canal was a little irregular. In the fundus of the uterus could be felt two distinct centers of development, one on the interior surface about two and one-half inches in diameter, and projecting from the main body of the uterus one and one-half inches. It was hard and had the unmistakable firm consistency of a fibroid mass. On the posterior surface of the fundus at its junction with the neck was a second center projecting from the uterus about one and a half inches. This mass was irregular and was fully two inches in diameter. The symptoms which brought this patient to me were prolonged and exhaustive hemorrhages and uterine pains. The lady is a vocalist of unusual talent and these symptoms interfered seriously with her profession. The case was a typical one for hysterectomy, especially as the left ovary was enlarged and cystic, but as that would involve the removal of the ovaries the patient objected to this because of the popular but unfounded fear that removal of the ovaries impairs the voice. I therefore decided to perform my operation on the case. When the patient was under the anesthetic I confirmed absolutely by bimanual manipulation my diagnosis as given above. February 1, 1895, I operated on this patient. She left the hospital in two weeks. She did not have an unfavorable symptom. Menstruation practically ceased from the date of the operation. There was but the slightest show each month. No pain whatever. In less than a month she was able to attend to her professional duties and was stronger than she had ever been. This perfect condition of affairs continued until about Dec. 8, 1895, ten months after her operation. At this time I was called because of a sudden attack of severe pain she had experienced in the left side of the pelvic region. The pain was accompanied with profound prostration and shock. I diagnosed ruptured cyst of the left side and advised a laparotomy. In making my examination I was surprised to find a perfectly normal uterus. I performed laparotomy on this patient Dec. 28, 1895, and removed a ruptured ovarian cyst of the left side and punctured a small cyst in the ovary of the right side. This gave me an opportunity to examine the uterus which I had treated by my operation a little over ten months before. On the anterior portion of the organ corresponding to the location of the anterior fibroid described above I found buried in the wall and projecting a half inch, a fibroid center one-half inch in diameter. On the posterior surface, corresponding to the other center which I palpated at the previous operation, was another center distinct but even smaller than the anterior one. These were both exhibited to the house staff and physicians present at the operation. The behavior of this case was most gratifying until the complication of the ruptured cyst arose. This fortunately gave me an opportunity of examining by direct sight the results accomplished by the first operation.

I have no doubt but that those two fibroid centers would have been starved out eventually and the case actually cured without any further interference.

General Summary: Thirteen cases operated on in which more than a year has elapsed since the operation:

Case 1.—Age 40. Operation Nov. 15, 1892. Very large bleeding fibroid. Present condition: Tumor much reduced. Hemorrhages ceased. Patient well.

Case 2.—Age 40. Operation December, 1892. Fibroid interstitial, size of three months' pregnancy. Profusely hemorrhagic. Present condition: Tumor disappeared. Absolute cure.

Case 3.—Operation January, 1893. Interstitial bleeding fibroid of two years standing. Four months after operation. Last report: Tumor reduced, patient much improved.

Case 4.—Age 38. Operation January, 1893. Very large adherent interstitial fibroid. Excessively hemorrhagic. Patient bed-ridden. Two years afterward: Uterus reduced almost to normal size. Hemorrhage ceased. Patient well and strong.

Case 5.—Age 30. Operation Jan. 8, 1893. Interstitial fibroid three by five inches in diameter. Profuse hemorrhage. Report four months after operation: Uterus normal; hemorrhage ceased.

Case 6.—Age 36. Operation Aug. 2, 1894. Interstitial fibroid. Profusely hemorrhagic and painful. Patient much reduced. Tumor three by five inches in diameter. Six months after operation much improved. No later report.

Case 7.—Age 35. Operation Nov. 11, 1893. Incipient interstitial bleeding fibroid. Two years after operation: Tumor reduced; hemorrhage ceased.

Case 8.—Age 35. Operation Nov. 28, 1893. Painful, hemorrhagic interstitial fibroid, size of four months' pregnancy. Two years and four months after operation: Tumor much diminished; hemorrhage ceased; pain less but not entirely relieved.

Case 9.—Operation May 19, 1894. Interstitial, painful, hemorrhagic fibroid. Tumor size of four months' pregnancy. One year and ten months after operation: Tumor slightly diminished; hemorrhage materially reduced.

Case 10.—Age 35. Operation August 1894. Tumor interstitial four by six inches in diameter. Hemorrhage and pain excessive. Not much improved eight months after operation.

Case 11.—Operation November 7, 1894. Tumor interstitial, hemorrhagic, painful and size of four months pregnancy. One year and four months after operation: Tumor decreased in size and hemorrhage ceased.

Case 12.—Operation Nov, 1894. Tumor interstitial, profusely hemorrhagic, painful, and three by six inches in diameter. One year and three months after operation: Tumor reduced: hemorrhage less; pain not improved.

Case 13.—Operation Feb. 1, 1895. Tumor intramural, two centers of development two inches in diameter each. Profusely hemorrhagic and excessively painful: hemorrhage and pain ceased; tumor disappeared, as demonstrated by a laparotomy ten months later.

MINOR SURGERY FOR SUBMUCOUS FIBROIDS.

Pedunculated submucous fibroids may frequently be completely removed through the dilated cervix without interfering materially with the uterus. Unless the tendency to pedunculate is well established however, and the center of development comprising the tumor is the only center of fibroid development to be discovered in the walls of the uterus as shown by careful bimanual palpation, it should be treated by hysterectomy either vaginal or abdominal. An exception to this general rule would be when a pedunculated fibroid is discoverable either in the cavity of the uterus or hanging from the cervix with a long thin pedicle. In such a case the polypus should be carefully removed from the uterus, even though there were other centers of development to be discovered. The uterus as a whole, here, could be dealt with in a later operation if the removal of the pedunculated mass did not sufficiently relieve the symptoms.

The removal of an intrauterine pedunculated fibroid is usually a simple procedure. If the pedicle is small and long and the tumor is in a position where it can be easily reached with forceps, it may be grasped in a strong vulsellum and the tumor twisted until the pedicle is actually twisted in two. This can only be done with thin pedicles. If the pedicle is broad the uterus should be sufficiently dilated (the patient under an anesthetic) to expose the pedicle, if it is necessary to accomplish this the cervix may be divided as high as the vaginal junction. The mucous membrane of the pedicle should next be cut in its entire circumference. Then the remaining portion of the pedicle composed of the blood vessels, connective and muscular tissue should be twisted in the same way that one proceeds to twist off a small pedicle. If

the remaining portion of the pedicle is small it will give way by that treatment. If it is rather large and fleshy, after it has been twisted into a small bulk it may be grasped by a strong pair of curved pedicle forceps and the pedicle severed with scissors or a knife outside of the forceps. If the pedicle is very vascular the forceps may be left in place for six or twelve hours. If this does not seem necessary the forceps are removed and the uterus packed with iodoform gauze. If the forceps are left on the pedicle, gauze should be packed around them. The forceps may be removed in six or twelve hours without disturbing the gauze.

I do not favor attempting to enucleate a submucous fibroid of any considerable size if its principal bulk is buried in the walls of the uterus. Such a procedure is attended with considerable mechanical difficulty because of the position of the tumor in the cavity of the uterus; it is a difficult matter to secure hemostasis in such a location and finally one seldom reaches in such a procedure more than one of several centers of developments of the tumors which are situated in the uterus. In these cases a hysterectomy is more satisfactory.

A cervical fibroid developing toward the mucous membrane, if pedunculated, should be removed in the same manner as that described for removing a pedunculated intrauterine fibroid. A cervical fibroid of small size may be enucleated by incising its capsule, grasping the tumor with a vulsellum, and dissecting it from its bed. The cavity may be closed with buried antiseptic catgut sutures or it may be packed with iodoform gauze.

CURETTEMENT.

In many cases of hemorrhagic fibroids much of the hemorrhage and leucorrhea is caused by endometritis. A safe and oftentimes beneficial treatment for such cases is thorough dilatation of the uterine canal and curettement of its mucous membrane. While it will not ordinarily have a direct curative effect it will frequently relieve disagreeable symptoms for a long period of time. The dilatation should be gradual beginning with Goodell's dilators and afterward exploring the anterior of the uterus with the index finger to discover whether there are any projecting masses into the interior of the cavity. After thorough dilatation with the cervix exposed and grasped with small vulsellum forceps in order to steady the whole organ, a sharp curette should be made to traverse all portions of the endometrium. This should be accompanied with some form of antiseptic irrigation. The whole mucous membrane should be gone over at least three times with the curette, the canal then loosely packed with iodoform gauze, the vagina filled with the same and the patient put to bed for several days. The gauze should be removed in forty-eight hours. After that antiseptic vaginal douches must be given for several days.

THE LATIN PART OF THE BODY.—Medico Lecks: The deceased was shot between the hyoid bone and the insertion of the sterno-cleido-mastoid muscle.

District Attorney Rockaway: Do I understand you to say that wounds in this Latin part of the body are generally fatal?

TWO EXPERIMENTS IN RESTORING LOST SPEECH, OR PARTIAL RESTORATION OF SPEECH BY SYSTEMATIC EDUCATION.

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While reading one of Professor Sully's articles on Childhood, the thought occurred to me that, in many cases of aphasia in people suffering from apoplexy of the brain and also in the allied disorders of softening and actual breaking down of different portions of the brain, there existed a striking analogy between such attempting to acquire the language anew and the child's attempts in learning to speak for the first time.

I recall two cases that give interesting and peculiar illustrations of this analogy. The first, a subject of right side paralysis, had been unable to speak at all, with the exception of the words, "gully" and "damn." The former she uses at all times and the latter only at periods when she becomes very much excited. This word "gully" she repeats three or four times in varying degrees of tone and pitch, as though each repetition of the word had a distinct and separate meaning and the whole represented some phrase or thought as in normal expression of ideas. The word "gully" is generally accompanied by a knowing look, a gesture of the hand, elevation of the eyebrows and tossing of the head from side to side. These accessories of gesture and modulations of voice are evidently very necessary to herself for proper expression, because when the hand and head movements are interfered with, she becomes very angry and will take no notice of anyone speaking to her, but when released will chatter on in her one word vocabulary, not at all reluctant to engage in conversation with any one upon any subject. When she becomes extremely angry, which she does upon slight provocation, she explosively emits the single word "damn" and covers her face with her hands in apparent shame because of such exhibition of anger. She readily understands most things said to her, as indicated by her quick compliance with one's commands. Her paralysis hinders her from taking an active part in any heavy work, but she is able to keep her own immediate surroundings in perfect order and cleanliness. Of late she has become quite fond of her nurse and, strange to relate, by the persistent endeavor and painstaking care of her instructress, the patient has been induced to copy the word sounds as given to her by her nurse. She keeps close watch of the nurse's lip movements and imitates them closely. It is needless to say that her progress in regaining the language has been exceedingly slow and only by the exhibition on the part of the nurse of those cardinal virtues of the true teacher, patience and tact, has she been able to keep the patient interested. The unfortunate woman can now make known some of her wants and desires quite intelligently, such as "I want a drink of water," and "Let me go out," to say nothing of the disconnected ideas as expressed by single and salient words combined with the appropriate sign language. By this peculiar method, saying "soap—water—towel," and again "crutches—walk—door—air," these phrases are quite readily interpreted into sentences expressing the desire that she wishes to have soap, water and towel, in order that she may cleanse her face and hands, and that she would like her crutches in order

that she may walk out of door to get the air. Although her speech impairment has been very severe, yet the noteworthy fact remains that she is able to sing most of the "airs of the day" that were popular prior to her attack of paralysis; yet this statement should be modified by saying that she remembered the words of only two, but the tune of all. It seems probable that the lesion in her left brain, causing paralysis and loss of speech, has almost completely destroyed the speech center of that side and, while it may be doing some of the work laid upon it by the act of speech regained, yet it seems more probable that the corresponding center on the right side is now being educated.

She is about 44 years old and her already severe speech disorder is rendered much more difficult to be recovered from, because of her advanced years and their natural hindrance to the acquiring of any language. Nevertheless, this case illustrates how long the destructive lesion may last and yet we may hope for improvement if great care and diligence are exercised in their reëducation.

The points of analogy between this case and the child's seem to be as follows: The single word "gully, gully" doing duty for a number of other words and even sentences, as the child says "ha-a, ha-a, do-da, or ka-ke," so she says, "gully, gully," and looks at you in a distressed way, as if to say, "you don't understand my language." Again, it is interesting to note the much earlier return of the noun substantives long before the use of verbs becomes common. Indeed, it seems similar to some system of shorthand where the vowels are dropped from words, only here the verbs are omitted, thus rendering the apparent analogy less complete.

This patient has an interesting way of gaining her object like the child; for instance, as night approaches she will look imploringly at the nurse and gently smooth the coverlet with her hands while repeating the single word "bed" many times or until some one prepares it for her night's rest.

The second case is also a case of right side paralysis. This paralysis has been nearly recovered from, but the aphasic symptoms still persist in a marked degree, although nearly three years have intervened. I endeavored to teach him the language by word lessons.

When asked what he did in the line of work, his reply was "dishes—cups—plates and saucers, towels, dining room." The next morning, after he had been carefully drilled to pronounce the whole sentence correctly, he replied, "L. McC. (patient's name) wipes ze dishes in ze dining room." When inquiry was made as to whom he referred by the name L. McC., he replied, at first in an uncertain way, "m-e" and emphasized his words by clapping his hands to his breast. The use of his hands so frequently in expressing his disconnected thoughts, is very childlike.

After several weeks of study on his part, he was taught to say "I" instead of "me," as he invariably did at first. Although he refers to himself as "I" most of the time, yet, when he endeavors to speak rapidly or when he grows excited in conversation, he is sure to speak of himself as "me." He grasps the present participle much more readily than the verb itself. Like the child and the very ignorant adult, he very readily falls into the error of forming all his nouns in the plural with final s. He is an audist in the full sense of Professer Charcot's classification, and instead of watching the lips of the instructor, as the first mentioned case did, he is solely concerned with the sounds of words.

In spelling small words, he quite often reverses the literal order. He always spells phonetically and in spelling some of our Anglo-Saxon words, he makes sad havoc of them. An illustration of his reversing the literal order of word construction is shown in his early effort to spell dog, viz: g-o-d, and cat, t-a-c. He has been gradually taught to spell in the popular way, but on coming to new words, he quite as often as formerly forgets and spells in reversed order. If words be pronounced several times for him prior to his spelling, he is much more likely to spell correctly.[1] He will repeat several times the word he intends to spell before actually doing so, in order to get the sounds of the letters and syllables. Illustration: "house," "scared." This act reminds one quite forcibly of the vocalist's endeavor to get the proper pitch of the note before commencing the piece of music.

In searching for the reason of his spelling in the reversed order, I noticed that he began with the letter sound heard last; this, on account of its being last uttered, was most prominent in his mind. When he spelled nose it became s-o-n-e. The final e was probably not put on the first of the word because it is not sounded in pronouncing. Why he did not place it somewhere within the word instead of at the end, or leave it out altogether, I am unable to state, unless it be for the reason that it does not give as smooth a sound to the word, when completed in any other way.

I am fully aware that, in some respects, he does not follow the child order of acquiring language. This, I think, is due mostly to the retention of his former knowledge of things or at least the skeleton framework of those lost ideas, the islets yet remaining after that general hemorrhagic submersion.

He was asked to name the objects in a picture as shown him (this was done by pointing to some birds and saying "What are they?"). After a moment's study, he replied, "robins." This childlike mistake he is constantly making, using the specific for the generic and vice versa.

It was interesting to note, in the ten months in which I was giving him instruction, the ear out-running the eye in education, when the auditory education would be discontinued, until he was equally educated by ear and eye. It did not occur to me until I had been giving him instruction for eight months, that his hand needed training too. When I asked him one day to write out the lesson, he could do none of it. For weeks he labored to gain control of written language, but he never learned it as well as auditory or visual impressions. I think the partial paralysis of his arm restricted the use of the hand in writing, to some extent.

An example of his wrong phonetic spelling is given in the following words, such being in his orthography —ben(ch), (ch)air, (sl)eep. His quick ear led me to think that he could be taught to say many things occurring in every day life, in an orderly and connected manner, thus making fairly smooth sentences expressive of his wants. In this I have not been disappointed, as he has acquired the count of money and

[1] Two autopsies have shown me the great difference between the speech center in a deaf mute and in a man who spoke seven languages. Not only was there great dissimilarity of the convolutionary folds, the one being simple and rudimentary in construction, the other being well developed, but there was also marked difference in the cell outline (under high power microscopic lens), thickness of different cortical layers and complexity of cell arrangement.

from such simple words as am, an and man, he is now able to spell and use words like scared, velvet, rabbit, basket, sing, dances, etc.

It will undoubtedly be much more difficult to get him to take up new ideas than it would be for a child, because if his speech center is not entirely destroyed by disease, it is at least damaged to such an extent that education of the opposite side must take place before he will regain much of his lost speech. The destructive lesion has probably abolished the association fibers connecting the word hearing centers in the brain with the word memory center or has interfered with the telegraphic communications to such an extent as to render memory impressions indefinite and imperfect.

This education of the right side of the brain is so rare in man that there is but little precedure or racial predisposition to its development, and, consequently its growth, to meet the exigencies thus suddenly thrust upon it, must be at best very slow and imperfect. For ages children have been taught to use the right hand and develop that side of the body in preference to the left, yet, notwithstanding all this, we occasionally see children using the left hand instead of the right for a long time. I have seen many children in whom the use of the left hand could not be stopped. The most that could be done was to allow them to become ambidextrous, which I am convinced is the best thing that could happen, not only to this but to all classes. I believe that, in these cases, the tracts leading to either side of the brain are equally as easy at first to transmit impressions, but after a few corrections, the nerve impulses become accustomed to traveling along the left side tract to the left center. If it were not for the fact that the left speech center in the child's brain at birth possesses the hereditarily acquired potentiality for development, it seems to me that the right side would take up the task of speech equally as well.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

REPORT OF THE COMMITTEE ON SYLLABUS.

(Concluded from page 775.)

BACTERIOLOGY.

On account of its intimate bearing upon the problems of disease, bacteriology, as presented in the medical school, should be studied closely in connection with pathology. The laboratory method should be employed in introducing the student to this subject, and progress is much facilitated when the student possesses an elementary knowledge of practical biology and some training in the methods of laboratory work. It therefore seems desirable to assign bacteriology a place in the first half (semester) of the second year's course, immediately preceding practical pathology which is begun in the second semester of this year. At least three laboratory exercises of two (calendar) hours each a week for fifteen weeks should be spent in the work. Two lectures, or conferences, weekly, may also be employed during the semester. Instead of the usual lecture it would seem advisable to devote the two weekly lecture hours to conferences in which the teacher discusses with his classes the various phases of the problems which naturally have suggested themselves in the course of the laboratory work. Later in the course, when a good store of observations have been made by the class, a few systematic lectures may be employed to discuss problems which are of a purely theoretical nature, or which are too difficult to be worked out in the class-room.

No single text-book fulfills the requirements of a course of this kind, and while the student may be encouraged to purchase one or more of the standard text-books, a laboratory library with various text-books, and including especially a file of the leading bacteriologic journals, should be provided for the use of the students.

The most important thing to teach the student in the bacteriologic laboratory is *how to work*. He should be instructed in bacteriologic technique so that he masters the various methods and can put them into independent practice. Instead of flooding the student with a great variety of imperfectly studied specimens in a frantic effort to illustrate all the disease-producing bacteria described in the text-book, teach him the technique of the bacteriologic laboratory and the use of the library so that he has the means for working out the problems which will present themselves when he sets out to work for himself.

Each student should be supplied with a full equipment of apparatus and material of a *simple kind* so that individual practice may be obtained in all of the methods demanded in the course. Everything in the student's equipment should be as simple and inexpensive as possible. Cheap tin stew pans and spoons, and tin funnels are more economical than corresponding pieces in glass. Instead of one or two large and complicated steam sterilizers for general class use, a small-sized Arnold sterilizer or a cheap tin apparatus on the principle of the steamer used in cooking should be given to each student. Salmonsen's cracker-box is a better dry sterilizing oven for the beginner in bacteriology than the elaborate ovens of Rohrbeck or Muencke. A simple, double-walled drying oven claims the advantage over an elaborate and expensive thermostat for the purpose in hand.

Every detail in the manufacture of the various kinds of culture media should be carried out by the student. He cultivates his own bacteria; makes all the temporary and permanent preparations; inoculates animals and recovers the bacteria; all by his own handiwork. Instead of depending on the stock of pure cultures with which most bacteriologic laboratories are provided, the teacher should require the student to obtain his own pure cultures of both non-pathogenic and pathogenic bacteria from the *raw material*. The hay bacillus should be obtained from the hay, the potato bacillus from the potato, the *staphylococcus aureus* from a boil or pimple, the colon bacillus from feces, and so on as far as possible.

The pathogenic microbes are naturally of the greatest importance to the student of medicine, and in a short course like the present one it will be found necessary to confine the work pretty closely upon those bacteria which are associated with human pathology. On the other hand, the time spent upon the non-pathogenic bacteria must be short. For the preliminary technical training, however, the non-pathogenic bacteria must be chosen instead of the pathogenic species, which would be unsafe to place in untrained hands. By exposing a slice of sterilized potato to the air the student can usually obtain several varieties of harmless bacteria, together with yeast and mold. Several of these accidental species may be studied in detail upon various culture media, by the hanging-drop, and in stained preparations the separation of

bacteria can be learned by practice on samples of tap-water, while the methods of bacteriologic analysis of water, ice, milk and soil are at the same time illustrated. In this introductory work the general principle of morphology and physiology of bacteria will be acquired by the student and the way opened for the study of classification. With the data obtained in this work the student should now attempt to classify one or more of his unknown species, making use of the keys in some such work as Eisenberg's Bacteriological Diagnosis or Sternberg's Manual of Bacteriology.

When this introductory work is completed the study of some of the disease-producing bacteria may be commenced. A few of the more readily obtained types, like the pyogenic cocci from acne pustules and the *bacillus coli* from the feces of man or the domestic animals, should first be chosen by the student, and the species should be isolated, studied in detail and identified by each member of the class. No rule can be made for the order of this portion of the work, for much will depend upon the supply of material. Aside from those ever-present harbors of pathogenic bacteria, like the skin and mucous membranes, which may be called upon to furnish the student with specimens, material from a variety of pathologic conditions like the pus of appendicitis, the membrane of diphtheria, the spleen of typhoid, the lung of pneumonia, which constanly find their way into the bacteriologic laboratory may be utilized for further class-room study. Here the technique of the smear preparation, alike of secretions, exudates and of tissue can be learned. Suppose, for example, that the surgeon sends to the laboratory a sterilized test tube full of appendicitis pus. Each student in the class makes plate cultures from the pus, and then studies it microscopically as a fresh preparation and finally makes smears which he fixes and stains in various ways. When the cultures develop they are studied in detail and compared with the bacteria found in the fresh and stained pus. Thus the student obtains a good picture of the relation of the bacteria to the morbid process, and incidentally he learns how to work independently. Only a few examples like this need be given to a student to furnish him with the proper foundation for future independent work.

Somewhere in connection with the foregoing work the technique of blood, pus, sputum examination, and the culture test for diphtheria can be introduced and duly emphasized.

The final step in the identification of a pathogenic bacterial species, that is, the experimental inoculation of a susceptible animal and the recovery of the bacterium in the blood and tissues by smears, sections and cultures, may be acquired by the study of a mouse or a guinea pig which the student inoculates with anthrax. Here, also, the technique of a bacteriologic autopsy in all its details can be learned. Once having learned this method the student may test the pathogenic activity of some of the species which he has isolated, as for example, the bacillus of diphtheria.

Only when the student has learned to work and has learned from his own experience the relation of bacteria in their various habitats, should he be furnished with cultures out of the laboratory stock. There is then no objection to furnishing him with examples of the more important pathogenic bacteria which he would not be likely to encounter in his class room work, such as the spirillum of cholera and the bacillus of tetanus, for instance.

The laboratory study of the bacterial products, of immunity, of bacteriologic therapy, and many other advanced lines of work must be left for elective courses.

The application of the knowledge gained in the above mentioned course should be made in the third and fourth years' courses. In the third year's course, when special pathology is studied, a bacteriologic examination of the morbid material brought into the class room should go hand in hand with the study of the gross and microscopic lesions in all diseases of infectious origin. In the fourth year's course, also, the student should be given the facilities for making bacteriologic examinations of the material obtained in the medical and surgical clinics and at the bedside. In this way the practical bearings of his knowledge of bacteriology will be indelibly impressed upon the student, and constant practice will keep the technique fresh so that, upon leaving the medical school, he can at once apply his knowledge in private practice or in his hospital course.

It must be evident that no laboratory text-book will meet the requirements of a course of this kind. The teacher must supply his students with syllabi prepared to cover the particular work in hand, especially in the early part of the work. In these syllabi careful technic directions should be given, along with suggestions as to the observations which the student is to make and to record, along with appropriate drawings. The slip system of taking notes and drawings has much to recommend it, and it should find its way into all lines of laboratory work. A convenient size of slip for laboratory work is $5\frac{1}{2} \times 8\frac{1}{2}$ inches with portfolio to correspond.[1]

LABORATORY EQUIPMENT.

The efficiency of the laboratory depends in a large measure upon the care devoted to the enormous amount of detail required to obtain the proper kind and amount of apparatus and material, to care for it when obtained, and to properly distribute it for the use of students and teachers. This can not possibly be left to the teachers in the various departments, but must be concentrated in the hands of one man who will attend to it impartially for all the laboratories in the institution. This should be the duty of the curator. The person selected to fill this important office must be possessed of peculiar abilities and command the entire confidence of the management of the institution. He should be given general instructions regarding the policy of the management toward the laboratories and complete information as to the resources at his command. Beyond this he should be allowed to work out the details without interference.

The curator must be provided with ample store rooms and a laboratory in which to prepare reagents and fit apparatus. This room should have a table with lead-covered top gently sloping to a drain at one end, water and gas pipes tapped at short intervals with attachment for rubber hose. The curator should be competent to prepare all reagents used in the microscopic laboratories and the ordinary solutions used in chemistry, which means that he should have a good general knowledge of chemistry.

He must first procure for himself all apparatus and material for a manufacturing laboratory, beakers, evaporating dishes and flasks, from the small sizes issued

[1] Teachers unfamiliar with the slip system of taking notes will find a detailed description in Wilder and Gage's Anatomical Technology, 1882, pp. 45–52.

to students up to those of several liters' capacity. Graduates, measuring flasks, pipettes, a druggist's balance, a counterpoise balance for weighing liquids, and by all odds let all weights and measures be in the metric system. Bunsen and dental burners, retort stands, tripods, an assortment of corks, xx, from number 1 to 24, rubber tubing, bottles in abundance, from one-eighth ounce morphin up to five gallon seltzer; a list so long that a day or two will be required to make it out. Then in a book he must set down everything that is to be manufactured, adding to this list as new requirements arise, checking off each item as it is finished, making a record of the amount made, when made, indicating the formula used and referring to the place where the formula may be found. Only a small part of his duties can be outlined here, but where special instructions are necessary they will be given under their appropriate heads. Everything issued to students in the shape of material and reagents must be labeled. For this purpose order from the druggist's label printer gummed strip labels the size of a druggist's shake label. A large number of these will be required, but they are inexpensive, about thirty cents per thousand. The following list will do for a basis and may be modified to suit:

LIST OF LABELS.

——% acetic acid.	Fehling's solution, quantitative.
——% chromic acid.	Flemm——'s solution.
——% hydrochloric acid.	FeS.
——% nitric acid.	Grape sugar.
Sulphuric acid.	Guaiac.
Agar agar.	Glycerin.
$AgNO_3$.	Gelatin.
Albumin fixative.	Gentian violet.
Absolute alcohol.	——Hematoxylon.
——% alcohol.	$K_2Cr_2O_7$.
Alum carmine.	$KClO_3$.
Ammonia.	Labels.
Analin.	——Methyl blue.
Analin water.	Miller's fluid.
Baryta mixture.	Methyl violet.
Benzine.	Molybdic acid sol.
Bismarck brown.	$NaNo_3$.
Borax carmine.	Oil bergamot.
Bromin Water.	Oil cloves.
Canada balsam.	Oil cedar.
Carnoy's solution.	Peptone.
Carbol-fuchsin.	Paraffin, hard.
——Carmine.	Paraffin, soft.
Chloroform.	Phenythydrazin chlorid.
Chlorin water.	Rubrin.
Colloidin.	Salt.
Congo red.	——Safranin.
CS_2.	Sulphur.
Cupric acetate solution.	Sodic carbonate sol.
Distilled water.	Turpentine.
Dahlia.	Uranic acetate.
Eosin, aqueous.	Ultramarine blue.
Eosin, alcoholic.	Weigert's deodorizing sol.
Eosin in glycerin.	Xylol.
Fehling's solution, qualitative.	

A week or ten days will be required to get these out.

IMPORTATION OF APPARATUS AND MATERIAL FREE OF DUTY.

The import duty on apparatus and material used in the laboratories averages about 40 per cent. Provision is made in the law whereby institutions of learning may have these duties remitted.

Each laboratory teacher should be required to make out a list of things he wishes to use and an estimate of the probable quantity. From these the curator makes his list which will include but once the name of every article used in all the laboratories of the entire institution, he can then make his own estimate of the quantity needed. The curator should familiarize himself with the work being done in all the laboratories so that he may judiciously trim the order to fit the appropriation, so that if economy is necessary it may be applied where it can best be borne. An order was once given including five orders for nitrate of silver, a pound package, a half pound, a quarter pound and two ounce packages. The price varied from $8 for the pound to a rate of $16 per pound for the ounces. In a $2000 order where one teacher's quota was about $200 he called for 100 grams of an organic preparation the price on which varied from $1250 to $1600. This list with price was "O.K.'d" by the purchasing committee and would have been ordered had it not been cut out by the curator. Of the curator's list half a dozen or more copies should be made and sent to as many importing houses with a request for quotations. Ordinarily the price should include delivery at the laboratory.

All material so obtained must be used in the institution and heavy penalties may be exacted should any of it be given away or sold. Two to five months are absolutely necessary to get goods from Europe. Experience, however, teaches that six months is not too much time to allow and if this time is allowed there will be fewer disappointments.

The number of different kinds of apparatus should be kept as low as possible. For instance, have but one style of beaker, one style of flask and one style of evaporating dish.

Five sizes of each will be ample. Each size must have a separate place in the store room and it will be easier to provide places for five sizes of one style of beaker than for five sizes of each of five different styles. A little judicious consulting with demonstrators will make this feasible. It is difficult to detail the annoyance and expense caused by a disregard of this rule. Ten different teachers will call for ten different kinds or makes of the same thing and it will require the services of half a dozen men to take care of the supplies which one might otherwise easily do. When the goods arrive some representative of the institution must go before the collector of customs and make oath that they are intended for use in the institution and that they will not be sold or otherwise disposed of. The goods must be examined by the customs authorities either in the customhouse or at the college when they are unpacked. The latter is preferable and should be requested.

TAX-FREE ALCOHOL.

Alcohol intended for scientific purposes may be withdrawn from bond without payment of internal revenue taxes. Instead of its costing $2.75 per gallon it may be obtained for about 50 cents, a saving of $80 or $90 on a barrel. To accomplish this the curator must make out a bond which is to be signed by two persons who are not officers of the institution, and who are citizens of the United States. This bond must be for an amount at least twice as great as the tax on the quantity of alcohol to be withdrawn at any one time. Thus a two hundred dollar bond will only allow one barrel to be withdrawn at one time, therefore the bond should be for at least $500 in which case a second barrel may be withdrawn before the first is entirely used up and the bond released. He must now go to a bonded warehouse and get the "description" of a barrel of alcohol and have the barrel set aside, he must take this description together with the bond to the

collector of internal revenue for the district in which the institution is located. These papers are sent to Washington and in a week or ten days a permit to withdraw for scientific purposes, the described alcohol will be received by the curator from the office of the Secretary of the Treasury. Some time and annoyance to all parties to the transaction will be saved if the application be made early in the month so that the alcohol may be delivered before the last day of the calendar month, otherwise it must be rebonded. The curator will now be required to sign a receipt which says he has *already received* the alcohol; this is to be sent to the collector who will then issue an order on the manufacturer or storekeeper to deliver it to the college. A page in the curator's record should be devoted to alcohol. Here is entered the description of every barrel of alcohol, just as in the application, with space for the date of receipt and date of release.

In the bond a time is mentioned when proof that it has been used according to law must be submitted to the collector. This time is usually six months or a year. At the expiration of this time or when application is made for more, the curator must present to the collector this proof, which is simply his affidavit to that effect.

LABORATORY TABLES.

A convenient laboratory table for microscopic work may be of the following dimensions:

Top, 7 ft. 3 in. x 2 ft. 2 in.; from the floor to top of table 2 ft. 6 in. It will have four cupboards 18 inches wide, 12 inches high and about 2 feet deep.

The upper part of the cupboard is occupied by a drawer 3 inches deep. The box containing the student's kit of apparatus just fits in under the drawer. The stools for the students to sit upon while at work should be 22 inches high. This table will accommodate two students at a time and afford accommodation for two classes. Two desks are to be placed with their backs together one inch apart and the space between bridged over by a board 3 inches wide. A gas pipe comes up in this place and runs the length of the table 3 inches above it. A four-way T opposite each place is fitted with a gas tap for each student.

The gas pillars instead of brass should be cast iron with the slit cut larger; these being much more convenient for slipping the rubber tube on and off. These double tables are placed with their ends to the windows if daylight is to be used. If gas is to be used for illumination, burners having chimneys are necessary, as an open gas flame is too unsteady for microscopic work. Some of the patented incandescent gas lamps furnish a white light which is very serviceable. Incandescent electric lights are said to be unsatisfactory owing to the yellow color. Perhaps kerosene lamps are best though somewhat troublesome to keep in order.

This gives each student 3½ x 2 feet of table space which is ample for most of the work but not too much. The door on this cupboard should be fitted on the *outside* where the hinges are placed so that it will swing round through three-fourths of a circle and thus be where it will not be broken.

If it is hinged to the left instead of to the right it will swing under the student's own table and thus not interfere with his neighbor.

LOCKS AND KEYS.

This is rather a large item of expense but it will not do to get a poor lock. Ability to settle with students satisfactorily depends in a large measure on the integrity of the lock. A Yale lock with corrugated key is not too good. Stipulate with the manufacturer that he mark each key (*but not the lock*) with a consecutive number and this number must be continuous for all the locks, having a similar key in the institution. Each laboratory must be designated by a number or letter, and all the doors having a lock in each laboratory must be numbered consecutively.

Each lock and its two keys will come wrapped in a separate paper or box; take these at random, or better still, mix them up with some care; now take a book ruled as follows with horizontal lines and three vertical columns.

	KEY.	LAB.	DOOR.	
	1	A	24	
	2	B	36	
	3	C	48	
	4	D	91	

In the first column the numbers are consecutive and there are as many lines as you have locks. The first column is headed KEY, the second is headed LABORATORY and the third is the DESK or DOOR in that particular laboratory. After the desks are all in place and numbers on, take the locks and key list, go into the laboratory, begin at one end, select a lock at random, place it in the cupboard or drawer it is to be put on, mark the laboratory and door in their appropriate columns and on the line corresponding to the number as the key. Follow this up till every door has its lock and every line and column on your key chest is full. The curator must do this himself and never trust it to workmen. A carpenter follows, puts on the locks and leaves the key in each one. When this is done the curator takes a portable key board and gathers up the keys. The keys are to be kept in a drawer where they are are protected from moisture, dust and the fumes of chemicals. Such a drawer may be fitted up in the following manner:

The drawer selected should be three inches deep. Set in a loose false bottom three-fourths inch from the top. Rule this off in squares one inch each way and where the lines intersect bore holes just large enough to allow the keys to drop down to the shoulder. Number the holes with the gummed paper numbers made by Dennison and varnish the whole drawer. A drawer eleven by twenty-one inches will contain 200 holes. Each hole will contain the two keys of the lock whose number corresponds to the number on the hole.

When desks are to be assigned, one key for each lock in that laboratory is taken on a portable key board and issued as places are assigned. The duplicate key is never allowed to go out of the hands of the curator and taken out of the drawer only to unlock the desks for the purpose of examining the contents, or when first key is lost. If a student loses a key he is charged the full price of the lock. The lock is removed and replaced by another. If a key is broken it is replaced for 25 cents. This prevents students from carrying the keys away and then "going through" that desk the next term when occupied by some one else. A key picked up anywhere can be at once loca-

ted by reference to the chart, while without the chart it is useless to anyone finding it.

MICROSCOPES.

The microscopes should be kept in a special room or cabinet where they are protected from injurious influences. This place should be fitted with shelves and these shelves spaced off with cleats and each space numbered to correspond with the number on a microscope. If the microscopes are of different quality, or not enough so that each student in the class can have one, they may be satisfactorily issued in the following manner: A large sheet of paper (one for each class) is prepared with as many horizontal lines as there are students in the class and with a vertical column for each laboratory day during the term. The names are arranged on this chart alphabetically. Then if there are seven students and only five microscopes they will be issued from day to day according to the accompanying chart.

PATHOLOGY 1892-1893.

	Sept. 21.	Sept. 23.	Sept. 25.	Oct. 1.	
Bennett, G. L.	1	3	5		2
Hamilton, A. C.	2	4		1	3
Mellon, J. S.	3	5		2	4
Smith, C. J.	4		1	3	5
Thomas, A. L.	5		2	4	
Wilson, M. S.		1	3	5	
Williams, H. L.		2	4		1

The numbers being filled in before class time, then no matter who comes first he will get the microscope allotted to him for that day. There will thus be no incentive to crowding. As they are returned at the close of the lesson each is returned to its appropriate place and the curator can see at once when all are in. In case a microscope is injured or any of its parts missing the responsibility can be instantly located by reference to the chart. Lamps, dissecting microscopes, micrometers, oil immersion, objectives, drawing apparatus, etc., can be kept and issued in the same way and at the same time. Microscopes should not be allowed to go into the chemical laboratory except with the most careful precautions to protect them from injury. The evolution of injurious gases in the rooms where they are kept or are in use must not be tolerated for a moment. If a large class is to begin the study of the microscope (and every class should study the microscope before studying microscopy), a number of students with some experience should be invited to assist the teacher at first lesson, at least, so that there will, if practicable, be an instructor to each microscope. This will be of real advantage to both the beginner and the student who assists.

STUDENTS' KITS OF APPARATUS AND MATERIAL.

Order from a box factory as many boxes as there are students expected. A good quality of packing box will do, made of dressed lumber, seven-eighth inch ends and one-quarter inch sides and bottom, without covers, of such dimensions that they will fit into the cupboards in the laboratory tables. Boxes 18 inches wide, 24 inches long and 8 inches deep will about fit the tables described, and will cost not to exceed $12 to $15 per hundred. Printed lists of the apparatus and material to be furnished each student are provided where laboratory courses in two or more subjects are conducted in the same room and with the same students the outfit for them all may conveniently be combined into one kit. These kits are best fitted up by arranging the boxes in a row on a table, then taking a tray containing a sufficient number of the first item on the list, walking down the row and putting in each box the number called for. Then follow with a tray of the next article, and so on till all are filled, and lastly put in one of the printed lists. The boxes are then piled up out of the way and are ready for distribution to the students on the day in which classes in the laboratory are assigned. When the box is delivered to the student he is required to take it to his place in the laboratory, check up the kit with the printed list, sign his name and desk number to the latter and return it to the curator as a receipt. These lists are now put separately into envelopes bearing across the end the name of the student to whom it belongs. The envelopes are arranged alphabetically and placed on end in a drawer prepared for the purpose. Each student is furnished with a small tablet of order blanks, plain pieces of paper 2½x5 inches, and henceforth every order on the curator for anything must be written on one of these slips and bear the name and desk number of the student. No orders on other paper will be honored. As these orders are filled, they are checked with a blue pencil and put into a convenient box. As the close of the term approaches these slips are assorted by an assistant and put in the envelopes with the printed slips. When the kits are returned to the store-room at the close of the term the curator and his assistant checks them up with the contents of the respective envelopes, puts a price on each item missing, dirty or damaged, marks the amount on the outside of the envelope and returns to each envelope its contents. Each envelope now contains the complete itemized account of a student and is preserved until a final settlement is made and the student receipts for settlement, when it is to be burned.

The amounts on the outside of the envelopes are entered in the curator's record book in the proper column and the total charged against each student is found by adding together the various charges on his line. The diagram of a page in the Curator's Laboratory Record will explain this more fully.

Everything possible should be issued to the student individually and charged up to him, then if he wishes to be wasteful and extravagant it will be at his own expense. Nothing should be "on tap" except gas and water. Each laboratory should have a gas meter and the gas charged to the class, and the cost divided equally among the members of that class. Slides, cover-glasses and other material are often prepared by the demonstrators for distribution to this class; but this is a faulty, pedagogic method and should not be permitted. Students must obtain everything from the store-room on their personal order and there should be no bottles "on the side" from which they can help themselves. Every one should be required to leave his desk clean and in perfect order on quitting the room. Habits of cleanliness and order should be insisted upon, and any indication of rowdyism repressed. Smoking should not be allowed in any of the laboratories. Young men who believe that it is the student's prerogative to smoke while at work, chew tobacco and spit upon the floors of laboratories or lecture rooms, mark up walls, whittle and break up furniture and otherwise bring into the school the habits of the hoodlum should be promptly advised to become sewer builders, street pavers or enter some other occupation where their habits will not be an

offense to all decent people. The medical profession is surely not in need of such material.

The following lists represent kits which have been found suitable for the work in the laboratories named.

NAME . . . . . DESK NO. . . .

LABORATORY OF BACTERIOLOGY.

See that your apparatus and material is all here and in perfect order, then sign your name at the top and return this slip to the curator.

Check here.		$	cts.
. .	Agar agar		
. .	Apple corer		
. .	Blotting paper		
. .	Bunsen burner and tube		
. .	Cotton.		
. .	Cheese cloth.		
. .	Droppers, 3		
. .	Forceps, cover glass		
. .	Filter papers, 1 doz., 25 cm		
. .	Flasks, 1,000 c.c., 3		
. .	Funnels, 2		
. .	Gelatin, 40 grams		
. .	Grape sugar, 5 grams		

Note book, peptone 15 gm., 6 petric dishes, Pillsbury box, platinum needle, potato knife, granite-ware pan, tripod, salt, slide concave center, sponges for cleaning desk, test paper, 100 test tubes, test tube brush, towel, wash bottle, 2 wire baskets.

STAINS AND REAGENTS IN BOTTLES.

Aniline water, balsam, nitric acid, sodic carbonate solution, glycerin, carbol-fuchsin, gentian violet, methyl blue aqueous.

LABORATORY OF EMBRYOLOGY, HISTOLOGY AND PHARMACOLOGY.

Alcohol, 3 camel's hair pencils, cheese cloth, oblong cover glasses 2 sizes, cover glasses, circles, drawing paper, 3 droppers, eraser and brush, filter paper in strips 1 package, cover glass forceps, fine pointed forceps, 2 glass rods, 1 box labels, tripod magnifier, 12 morphin bottles and corks, 2 teasing needles, 1 box hard paraffin, 1 box soft paraffin, 2 pencils hard and soft, 6 French drawing pens, 2 Pillsbury boxes, 2 porcelain dishes, ½ gross plain glass slides, concave center glass slide, section lifter, 2 pairs scissors fine and coarse, sponge for cleaning desk, towel, tin pan, 5 test tubes, 6 watch glasses, 1 solid watch glass.

STAINS AND REAGENTS IN BOTTLES.

Alum carmine, balsam, borax carmine, eosin aqueous, Carnoy's solution, colloidin and clove oil, chloroform, chromic acid solution, gentian violet, hematoxylon Delafield, hydrochloric acid, Mueller's fluid, oil of cloves, oil of cedar, safranin, 1 per cent. solution silver nitrate, xylol and carbolic acid.

LABORATORY OF BIOLOGY, HISTOLOGY AND PHARMACOGNOSY.

Alcohol, beaker, benzine, blotting paper, glass blowpipe, 1 oz. q. s. bottle, 3 camel's hair pencils, cheese cloth, colloidin, ⅝ inch No. 2 box cover glasses, cork sheet, drawing paper, 6 drawing pens, 2 drawing pencils, india ink, eraser and brush, dissecting pans, 3 droppers, 12 filters, 2 forceps, funnel, 2 glass rods, 6 4 oz. screw cap jars, one 16 oz. screw cap jar, 1 box labels, tripod magnifier, notebook, 2 needles, paraffin hard and soft, Pillsbury box, box black pins, 2 porcelain dishes, 1 retort stand, 3 retort rings, scissors, scalpel, ½ gross glass slides, sponge, 5 test tubes, test tube brush, towel, wash bottle, 6 watch glasses, 1 solid watch glass.

STAINS AND REAGENTS IN BOTTLES.

Alum carmine, albumin fixative, balsam, borax carmine, chromic acid sol., eosin aqueous, gentian violet, hydrochloric acid, hematoxylon, Delafield Müller's fluid, oil of cloves, oil of cedar, safranin, silver nitrate sol., ultramarine blue.

LABORATORY OF EMBRYOLOGY, PATHOLOGY AND SURGICAL PATHOLOGY.

Alcohol, absolute alcohol, quart tin basin, blotting paper, 3 camel's hair pencils, cheese cloth, cover glass circles, cover glass oblong (18 large, 18 small), drawing paper, drawing pencils, 6 droppers, eraser and brush, fine pointed forceps, coarse straight forceps, weight forceps, box labels, tripod magnifier, 12 morphin bottles and corks, 2 needles, paraffin hard and soft, scissors, ½ gross glass slides, concave center slide, sponge, 3 test tubes, test tube brush, towel, solid watch glass, 6 watch glasses.

STAINS AND REAGENTS IN BOTTLES.

Acetic acid, alum carmine, ammonia, albumin fixative, balsam, Bismarck brown, Carnoy's sol., colloidin, chloroform, cupric acetate sol., eosin in glycerin, eosin in alcohol, hydrochloric acid, hematoxylon Weigert, hematoxylon Delafield, methyl blue, oil bergamot, oil of cloves, Weigert's decolorizing sol., rubin, xylol and carbolic acid.

LABORATORY OF CHEMISTRY.—A.

Burette, 5 beakers, Bunsen burner and hose, file, 2 packages filter paper, filter stand, 2 flasks, 2 funnels, funnel tube, 2 feet glass tubing, 2 glass rods, hydrogen sulphid tube, mortar and pestle, pincers, platinum needle, 2 porcelain dishes, retort stand, 3 retort rings, sand bath, 10 test tubes, test tube rack, test tube brush, pipe stem triangle, urinometer, wash bottle, water bath, 3 watch glasses, wire gauze.

REAGENTS.

Anilin blue, baryta mixture, congo red, eosin, Fehling's solution quantitative, Fehling's solution qualitative, gentian violet, tr. guaiac, phenylhydrazin chlorid, sulphuric acid, potassium dichromate, sodium nitrite, sodium chlorid, sulphur, ether, alcohol, iodic acid, bromin water, chloroform, hydrogen peroxid.

LABORATORY OF CHEMISTRY.—B.

Aluminum wire, 5 beakers, blow pipe, Bunsen burner and hose, file, filter paper, 4 and 6 oz. flasks, 2 funnels, funnel tube, 2 feet glass tubing, 2 glass rods, hydrogen sulphid tube, pincers, platinum foil, platinum needle, porcelain dish, retort stand, 3 retort rings, sand bath, sponge, test paper, 10 test tubes, test tube rack, test tube brush, towel, pipe stem triangle, wash bottle, 3 watch glasses, wire gauze.

REAGENTS.

Red lead, ferrous sulphid, potassic chlorate, carbon disulphid.

CURATOR'S RECORD BOOK.

In order to reduce book-keeping to practical limits a special book is required. It may be of any convenient size, but where there are a number of laboratories and many students the following is a good size. The page is seventeen and one-half inches high and the double page twenty-three inches wide. It is check-ruled so that there are one hundred horizontal and about one hundred and forty vertical lines on a page. Every other horizontal line is heavier than the rest. The account of each student is placed on one of the heavy horizontal lines, making fifty on a page. Five vertical columns are allowed for the account in each laboratory. The heavy lines are numbered both at the left and right of the double page. The names of the students are written on the left, their accounts in the respective laboratories filled in the proper column and when settlement is made the student signs his name at the extreme right of the same line. Thus each student's account occupies but one double line and is a matter of permanent record. This book must also contain a complete inventory of all the microscopes and other permanent apparatus, with description, manufacturer's and private marks to be used for purposes of identification. Also, alphabetically arranged a list of *everything* in the original purchase, with columns for the amounts purchased each year, and the price paid. This is necessary as a basis for the price to be charged students and for future orders.

WM. OSLER, Pres't, Baltimore.
BAYARD HOLMES, Sec'y, Chicago.

Ohio Cigarette Law.—The Ohio law with regard to selling cigarettes has been very materially amended in several respects, and now is, that whosoever sells, gives or furnishes to any minor under 16 years of age any cigarette, cigarette wrapper, or any substitute for either, or any cigar or tobacco, upon conviction thereof, shall be fined not less than $25 nor more than $100, or imprisoned not less than two nor more than thirty days, or both, for the first offense; and fined not less than $50 nor more than $300, and imprisoned not less than five nor more than sixty days for the second or any subsequent offense.

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SATURDAY, APRIL 25, 1896.

VIVISECTION AND LEGISLATION BY CONGRESS.

The anti-vivisectionists, mainly through the societies to prevent cruelty to animals, usually known as Humane Societies, are actively at work coöperating with the society in Washington to secure by Congress such legislation as will prohibit all laboratory experiments on animals in the District of Columbia. If they succeed in obtaining the enactment of the bill now pending, it will close the biologic laboratories attached to the Surgeon General's Department, the Bureau of Animal Industry of the Department of Agriculture, and Marine Hospital Service, and, stop the investigations now in progress which promise important contributions to the science of medicine.

These efforts consist in personal solicitations of members of Congress, the distribution of literature setting forth in startling language the cruelties of medical men in general, and especially of the experimenters, petitions to Congress from the allied organizations throughout the country, and personal letters to members of Congress from their constituents, who are engaged in this crusade against investigation and science.

The medical profession throughout the country does not seem to take much interest in the contest at Washington. A few remonstrances have been presented to Congress, but there has not been any general expression of opinion on the part of the profession either in individual or organized opposition. An act of Congress limited in its operation to the District of Columbia, may seem to be a very trivial matter, but it will give such an impetus to the efforts of the propagandists that every State, city and medical college in the country will soon realize the disastrous results of such inactivity on the part of the profession. The time has surely come when the medical profession of this country should assert itself with spirit, force and determination.

The medical profession is not the only class of citizens interested in this question. The discoveries of the causes and prevention of the diseases of animals by the Bureau of Animal Industry have, perhaps, saved several of the live stock industries from total destruction, certainly so in some of the States.

The Cuban imbroglio in the Senate and the A. P. A. complications in the House seem to have completely arrested the progress of local medical legislation. Senator GALLINGER, in charge of the Medical Practice bill, and Senator BACON, in charge of the Medical Testimony bill, have not been able to secure the consideration of either of these bills by the Senate. The House Committee continues to timidly tinker with the Medical Testimony bill. It seems to be afraid somebody will get hurt by reporting a bill which everybody admits is just and wise. The HON. JOHN W. BABCOCK, of Wisconsin, is the most efficient chairman of the committee of the House on the District of Columbia it has had for many years and is anxious to promote the progress of scientific medicine by such legislation as the profession may demand, but he lacks the support of the profession throughout the country. If the medical journals could be induced to present the important subjects of legislation before the profession at large and invite attention to the necessity of united action and effort, much good might be accomplished.

The Medical Society of the District of Columbia is the largest and most active medical society in Washington. It has a membership of nearly three hundred, with an average weekly attendance at its regular meetings of about one-third of its membership. It is the body from which all proposed legislation relating to local medical and sanitary matters emanates. Through its committee on Public Health, its members are kept advised of all necessary sanitary reforms, conducive to the healthfulness of that city. For several years past it has been very active in its efforts to secure legislation by Congress to improve the sanitation of the city, but the progress of success has been very slow, because of the lack of interest of the majority of the members of Congress in all matters relating to the District of Columbia.

THE NEGATIVE ETHICS OF SURGERY.

The forthcoming seventh annual report of the Boston City Hospital will contain an essay by DR. DAVID W. CHEEVER, emeritus professor of surgery in Harvard University, upon the morals of surgery. According to the *Boston Medical and Surgical Journal*, this essay will touch upon some of the times and scenes when the surgeon refrains or turns back. One branch of his subject, DR. CHEEVER opens with the reflection: What is more distressing than a death upon the table?

What injures our art more than a fatal operation, which pathology proves to have been useless, or even more, unnecessary?

When to operate: If we confine our selection of cases to those which clearly come under the cardinal rule for operation, namely, to relieve suffering, or to prolong life, or both, we shall have little difficulty in the choice. Is life imperiled? should be the first question. Can we probably relieve the suffering? the second. But when asked to operate, shall we accept only good risks, and refuse the doubtful or hopeless cases?

When not to operate: When to decline is the real difficulty of decision to be met. Do not operate without the full consent of the patient and friends, if possible. See that some responsible party understands what operation you intend to do, and what may be reasonably expected from it.

Do not operate in a state of shock, unless hemorrhage, apnea, or obstruction of the bowels, as in hernia, is going on. If you have time, consider fully the systemic condition of the patient—the integrity of the heart, arteries, kidneys. In a case of no emergency, the age and prospect of life of the patient are to be taken into account. A person of seventy years, having an expectation of life of five or six years, is in a very different category from a youth of sixteen, who has a reasonable expectation of life of sixty years. You would take a risk with the latter which you would not with the former.

Do not operate in glandular infiltrations so extensive as to preclude perfect removal. Do not operate where you can not remove the whole disease, as in a tuberculous organ, if you excise a part; or a sarcoma of the antrum where you can not extirpate the sphenoid cells. To these rules we would make two important exceptions:

1. To relieve agonizing pain operate on any slight chance; for unless the suffering can be palliated, the patient had better die than live.

2. In a "forlorn hope" so called, after you have fairly stated the risk, the patient is entitled to an operation if he wishes, and if he takes the responsibility; but even here you must limit yourself to cases where there is a single, or some, chance of success.

During an operation when must we stop? When the patient fails? Not always. That failure may be due to ether, or even to simple nausea. Pause, stimulate, consider maturely, before abandoning your task.

Stop when you have reached the end of all you can take out, in a malignant tumor, for instance.

Stop in an operation in the abdominal cavity when a glance or touch reveals that the tumor is not removable, and has grown into vital parts. Do not explore it farther, or you will get where you can not stop.

Stop in an operation on the surface of the body when stopping will not imperil life as much as going on: in syncope, with a weak pulse, with sighing respiration, with a colliquative sweat.

"THE THOUGHT MACHINE."

Those who confine themselves to the regular types of literature or science miss a great deal of pleasure. The most perfect illustrations of humor are most solemnly and seriously meant. There can, for example be nothing more provocative of mirth than some of the publications to-day being issued by the homeopathic press. The *Medical News* a year or more ago gave some selections from one such book that would have warmed every cockle of Mark Twain's heart if that excellent authority in humor, though not in medical science, were not a homeopathist himself. Likewise in the many periodicals, books and leaflets devoted to faith-cure and such delusions there is hardly a page that does not delight the lover of fun.

We have before us a number of one such periodical labeled *Freedom*, in which is a full-page description of "A Wonderful Machine." It is put forth in all seriousness—an added element of the ludicrous—and we only regret our inability to make more lengthy quotation than we have permitted ourselves. This truly wonderful machine is said to have been devised by JULIUS EMMNER of Washington, D. C. If the machine could do what is suggested by the name and description, one should at least be placed on the desk of every member of Congress, and its uses would seem of marvelous applicability in many walks of social and professional life.

From the description given it would appear that the machine bears much resemblance to the phonograph, but there is this marked difference, instead of talking into it, one only thinks hard at it. Fearing that we may misunderstand or misreport the account we are compelled to quote:

"'The Thought-Machine,' continued the inventor, 'effects the tangible coupling of material and immaterial forces, with electricity as my motive power and chemistry as my recorder. The chemically sensitized surface of a cylinder, while undergoing decomposition by the electric current, receives the magnetic thought-waves which stream from the physical brain of the operator, and portrays them—vibration upon vibration, form upon form—with microscopic fidelity, in an imperishable message. Now, the separate actions of all these forces—electricity, the chemical sensorium, and the magnetic currents of the human brain—have long been thoroughly understood. But the Thought-Machine combines the actions of these three distinct forces in an apparatus where such faultless electrical, chemical and mechanical conditions are subject to the operator's will that the delicate mind-currents, conveying his thoughts, are engraved upon the sensitized surface as a continuous, unerring registration.' . . . . .

"MR. EMMNER then requested silence for a moment seated himself before the Thought-Machine, adjusted it for recording and opened the electric circuit. The mechanism began its smooth, noiseless motion, the cylinder revolving on its axis, pressed softly by the electric pencil passing along its face. Then, as the inventor brought his head within a foot of the recorder, directing his mind upon the machine, a thin, cloud-like thread wound spirally about the glistening film, from left to right. This was the thought record, which after several minutes of silent work, had overspread the entire film with its smoky tinted coils. The record finished, MR. EMMNER released a circuit button, the mechanism stopping as noisely as it began, and invited a test of the record, no better idea

of whose accuracy can be given than to state that by arrangement with the inventor, a number of thoughts forming the descriptions in this article have been thought into and received from the Thought-Machine, in perfectly logical sequence. The wizard of thought then continued to chat pleasantly to the correspondents.

"'Some notable developments from experimenting with thought-records,' said he, 'are that languages, as well as words, have each their distinct, intelligible records; that emotions of like kind have like vibratory records, while superimposed records of violently different emotions tend to produce temporary insanity in the re-thinker; that animal 'sagacity' so-called has likewise a characteristic vibratory record, well nigh amounting to a language, but also deleterious to the human re-thinker; that thought is the explosion of the mind as vocality is the explosion of the mouth; that a captive human being, held forcibly against his will within recording distance of the machine, involuntarily registers his thoughts; that thought has color as well as vibration, and that it is conveyed, with varying distinctness, to all the ganglionic and nervous-vital centers of the body.

"'The uses of the Thought-Machine will be more extensive than can possibly be predicted,' continued MR. EMMNER. 'To the law it will be invaluable for the involuntary conviction of criminals by the automatic registration of the thoughts of their crimes. The last wishes if the dying can also be given an irrefutable record, of vital importance in the settlement of estates. In medicine it must prove equally indispensible for treating the insane, whose condition can be unerringly found by this delicate but unsympathetic examiner; while, in connection with the electroscope, it will prove an inestimable help for diagnosing nervous mental diseases. In fact, a broad area for experiment in chemical electricity and psycho-physiology is opened by the new machine.

"'To the business man in the intricacies of commerce, and to the author in the niceties of higher composition, it will prove alike a boon, and to inquirers in every field of science, it will furnish a new and reliable means of verification. So that the practical effect of the Thought Machine in our daily life will thus be to save much of the most valuable thought of the world which now goes to waste, and to lighten labor by facilitating its transmission to mankind.'"

It will be noticed that there is a complete omission to reproduce some of these records—these "thin cloud-like threads wound spirally about the glistening film, from left to right," and no hint is given as to the interpretation or nature of this new language which is to take the place of "vocality, the explosion of the mouth," of the rest of us ordinary mortals. Why should the "wizard of thought" much longer continue to "chat pleasantly, etc.?" Why shouldn't he look hard at his hearers and work his thoughts by will power directly into their minds, without the aid of any vocality or crude thought-machine. The professional reader will at once notice the medical suggestiveness of this new kind of X-rays. RŒNTGEN is certainly outdone. Why should not the machine be brought before an abnormally acting stomach, or hidden tumor, and by extraordinary "sensitization" make the viscus or neoplasm think hard at the apparatus, and thus learn *its* thoughts—for according to the theory it must have, nay, *be* "thought."

What an opening is disclosed to medico-legal science! We suspect BERTILLON must look to his laurels as well as ROENTGEN, and that our police bureaus and courts of justice will soon be outfitted with Thought-Machines. What a great saving in all legal trials! All the judge and jury will have to do will be to arm themselves with a machine like a "kodak," and go pointing it at the criminal, witnesses, and lawyers, and, lo! on the revolving cylinder will be the record of every hidden thought divulged in "thin cloud-like threads, wound spirally, etc."

The editor of *Freedom* is able to go the inventor "one better," and appends an editorial footnote as follows:

["A simpler explanation of this apparently marvelous thing is that thought is a substantial entity, and is capable of being photographed. And the Thought Machine is nothing more than a camera adapted to this purpose. I have known for many years that thoughts are things, and that they can be charged with a purpose and sent anywhere, no matter how far, in order to fulfill their mission. I have *seen* thought myself. I have seen it pass as a fine, silvery, shimmering stream from me to a patient when I have been treating him. It could have been photographed I am sure; and then by the process of enlargement, which photographers employ, I have no doubt but its meaning could have been made to appear—if not in words, then in unmistakable symbols, or perhaps harmonious musical chords, or softly blended colors—something anyhow that would have meant harmony and strength and beauty.—ED."]

Verbum sap.!

THE DESPISED OFFICE OF MOTHERHOOD.

"You dear sweet baby! Mother feels perfectly dreffful 'cause you didn't win first prize." In these terms, a handsome young woman, fashionably and expensively clad, at a recent exhibition in the city of New York, addressed—*her cat!* A crowd of other anxious "mammas" and "muzzers" washed and combed and beribboned their "blessed darlings" before each day's opening of the cat-show.

These are the women, daughters of wealthy parents, who announce before their marriage that they do not intend to have any children, who declare that a rosy infant nursing at its mother's breast is a vulgar, indecent spectacle, and who consign to a menial the task of dressing and feeding the little babe whose conception they strove by syringe, sponge or baudruche to prevent, and these failing sought to forestall by other means of which their knowledge is a fearfully suggestive fact. The naked South Sea Islander, who intuitively worships the unknown God of Nature, or the pagan of the churches, who calls his God Buddha or Allah and his Savior Saddartha or Mahomet, has far less need of Christian missionary endeavor than these

bejeweled creatures of fashionable society, who are defying the precepts of the Jesus they profess to revere and the sweet example of the blessed Mary, who sanctified the office of motherhood in her own person. Physicians will do well to ponder on this aversion to child-bearing, which ought to be the ambition of every healthy, happily married wife.

A new word from the prolific Greek—anerotic—has come in vogue in the course of the discussion as to the causes of the admitted unfruitfulness of the better classes of American women. That the majority of the women of this day are endowed with only a moderate degree of sexual propensity is undoubtedly the fact, and by many this may be regarded as a providential provision against immoral indulgence by the unmarried and a restraint upon conjugal excesses, but apart from the extinction of a normal physiological function, which can not be commended, the unreproductive effects upon the community are deplorable. The deficiency of children in modern well-to-do families and the consequent diminution of paternal, filial and fraternal bonds are aiding to destroy that most charming institution of our grandsires, the ideal American home. The new woman craze is the natural outcome of the weakening of home duties, ties and demands. Having no longer the absorbing occupations of the nursery, play-room and domestic schooling, to engage time and thought, the epicene woman mounts her bicycle, joins her club and fondles cats and dogs instead of children.

A careful inquiry into the ultimate causes, which have made maternity unattractive will probably find that reprehensible social customs are first responsible for the physical deterioration and the latter the proximate cause of unfruitful union. The demands of modern fashionable life and its pseudo-fashionable imitators are so largely in the direction of public entertainments where display is the feature, that domestic reunions and harmless diversions have fallen into disuse and the daughters of plain folk, like those of the wealthy, are only interested in meretricious theatrical doings and the insanitary indulgences of the ball-room. Intemperate dancing by adolescent girls is more to blame for genital disturbances than any one other cause. The homely dances which began and ended early have been supplanted by those which do not commence until after the hour when the young girl should be asleep in bed, and continue until daylight, the jaded creature having to overcome her exhaustion by stimulation with beef tea, strong coffee, champagne, or the latest maintainer of energy, kola. It requires no profound knowledge of female anatomy and physiology to realize that an immature menstruating girl can not sit up until midnight and then undergo the physical exertion of a ball-room belle for hours on successive nights without establishing a train of symptoms indicating serious impairment of her normal sexual development, especially when that girl superadds a vicious style of dress, which aims to diminish the diameter of her waist beyond the possibility of the contained organs remaining in situ. Though mothers and daughters do not heed, is the family adviser any the less derelict, who does not show them how pressure upon the mammæ results in their atrophy and unfits them for their prime purpose and how displacement of the pelvic viscera induces painful strains, which are so common that the XXth century woman without a backache ought to be the envied of her sex. The normal function of the sexual period has come to be so abhorrent, that the interference of the menstrual recurrence with prospective gaieties only incenses the pleasure-seeker who attempts to retard or prevent it at any hazard. Whether lack of the development of the erotic sites of the female sexual apparatus is a progressive degenerative incident due to these and other concurrent causes and is a primary reason for the avoidence of conjugal duties, the fact is that such a condition is becoming a frequent topic in medical discussions. Inquirers as to the causes of prostitutions agree that sensual gratification is an inconsiderable factor in the recruitment of the class of public women. The love of dress, thirst for excitement, acquiescence for the sake of the professing lover, evil example, curiosity, poverty, unwillingness to work, all these have their victims, and ruin hundreds where the mere gratification of passion allures individuals. Sociologists may look for the explanation of the frequency of divorces in the dissatisfaction of husbands, who find themselves bound to women to whom sexual relations are repugnant, whose horror of maternity is overpowering, and whose unwelcome offspring are denied their natural sustenance through maternal incapacity or selfish disinclination. The surviving daughter is sure to be trained in her mother's violation of all the laws of female hygiene and to become in turn even more indisposed and less fitted for maternity.

The remedy for the unnatural aversion to motherhood, whatever its cause, while within the province of the medical adviser, is not to be found in aphrodisiac medication. "Give him bromid; don't dose me with damiana," significantly protested a wife in whom an injudicious physician was trying to arouse the sleeping venery. The removal of physical impediments, such as preputial adhesions, must be supplemented by instruction as to conjugal duties and responsibilities and by reform in social customs, which latter, however, it is perhaps idle to expect in this generation.

THE JOURNAL SPECIAL.

Take the JOURNAL special train for Atlanta. Stop over tickets allowed, on return trip, at Chattanooga and other points. Leaves Chicago, Sunday, May 3, 12 M.; Big Four Route, Illinois Central Station.

EXCRETORY MATTER IN EXPIRED AIR.

An interesting series of observations is being carried on under the direction of PROFESSOR ATWATER of the Wesleyan University at Middletown, Conn., on the respiratory excretion and the animal heat in the human subject. PROFESSOR ATWATER and a colleague have for several years been perfecting the apparatus and have now probably as perfect a respiration calorimeter as is possible at the present time, and have, moreover, found among their associates intelligent and willing subjects for experiment; one of them, PROFESSOR TOWER, of the Wesleyan University, having already served for one series of observations covering five days, and a colleague, MR. A. W. SMITH, for a still longer series. This is a kind of physiologic experimentation to which not everyone would be willing to submit, and yet one that can not be objected to by any anti-vivisectionist.

The earlier experiments of PETTENKOFER with this method of determining the respiratory products were necessarily imperfect and his results as regards the measurement of the heat given off still more so, and at best only coarse approximations to the facts. By enlisting in the experiments the intelligence of the subjects and securing an especially high grade of this requisite the value of the investigation ought to be materially augmented, and altogether the conditions in these experiments appear to be particularly favorable for the attainment of valuable results. Their theoretical importance in elucidating the questions of physiologic conservation of energy is very great, but more interest will probably be generally taken in their practical applications in demonstrating the value of different diets as favoring work in general or in employment of various kinds. In this way they can throw light on many economic problems and be of direct service to the world.

PROFESSOR TOWER has published an account of his five days' seclusion in the calorimeter chamber, which is of interest as showing the easy practicability of such experiments. When the results are fully worked out and given to the world one can better judge as to their success and value, which last can hardly fail to be considerable. With the continuation of the observations it is to be hoped that many important questions will be solved, and that the more or less imperfect data obtained from PETTENKOFER'S observations which have been so long one of the chief sources of our information on this subject, will be very extensively and adequately supplemented.

CORRESPONDENCE.

"A Question of Priority in the Abortive Treatment of Typhoid Fever."

To the Editor:—"*La politesse ne coûte rien.*" In the issue of the JOURNAL of March 21, 1896, under the caption "A Question of Priority in the Abortive Treatment of Typhoid Fever," there appears over the signature of Arthur J. Hall, a remarkable criticism of the paper on typhoid fever which I read before the Mississippi Valley Medical Association at Hot Springs, Ark., on Nov. 21, 1894. From this critique I make the following quotations: "Dr. Woodbridge expounded his so-called abortive treatment of typhoid fever, giving three polypharmic formulæ, with instructions for their use, and claimed he had had twelve years' experience with this treatment. The formulæ contain guaiacol carbonate to the extent of $33\frac{1}{3}$ per cent. This claim of twelve years' experience with guaiacol carbonate is at variance with a statement of the manufacturers of the drug." Now it is not true that I did in this paper or in any other written or oral communication, claim to have had twelve years' experience with any one drug or any single combination of remedies. On the contrary, I have on several occasions denied having been guilty of any routinism in the treatment of typhoid fever, until forced to it by the necessity of simplifying (that it might be published in an intelligible form) the somewhat complex course of medication which constitutes my method of managing the disease, and later by the results which I have invariably obtained from the use of the tablets and soft capsules which are prepared for me by Messrs. Parke, Davis & Co.

Moreover, I have outlined in several of my articles the whole series of investigations in the fruitful field of the application of antiseptic medicine to the cure of diseases, which finally culminated in a choice (for the abortive treatment of typhoid fever) of the three formulæ mentioned.

If Dr. Hall will turn to page 210 of my book, "Typhoid Fever and its Abortive Treatment," he will find this explanation: "The narration of my failures and partial successes with all of the various agents from turpentine and the sulphites to iodin, which were one after another used and abandoned, would be a waste of time and space and would, I fear, exhaust the reader's and hearer's patience, although it might save future explorers the trouble of testing unreliable antiseptics. The only one of these earlier remedies which I still occasionally use is turpentine. Creasote has been displaced by its active principle, guaiacol, and that by the more potent and non-toxic guaiacol carbonate."

Thus the evolution was a natural one from creasote to guaiacol absolute and from guaiacol absolute to guaiacol carbonate; just as eucalyptol was suggested to my mind by the use and beneficial effects of turpentine.

If Dr. Hall had taken the trouble to inform himself he would have learned that the whole subject has been discussed until it has become so trite that there is nothing new to say upon it, and if he will give the matter that careful consideration which its importance merits, he will discover that something more than the "excellent results" which he has observed from the "so-called Woodbridge treatment" may be expected if it is intelligently applied, and that the "amelioration of symptoms" which may be obtained alike from carbonate of guaiacol and many other intestinal antiseptics does not constitute all of the results of the "abortive treatment" for typhoid fever, "the claims" of which are "well-founded."

The article closes with: "Dr. Woodbridge may be entitled to credit for introducing the drug to the profession in the United States, but I believe it would have redounded more to his credit had he told us to begin with that he imbibed his inspiration from the experiments of Dr. Hoelscher, of Mühlheim on the Rhine."

I regret having left anything unsaid or unwritten which could have "redounded to his (my) credit," but I had advised an abortive treatment for typhoid fever more than ten years before Dr. Hoelscher published or *made* his experiments, and had used carbonate of guaiacol long before I ever heard of Dr. Hoelscher and long before Messrs. Schering and Glatz (in 1894) issued the little advertising circular from which it appears that

Dr. Hall extracts the learned quotation which he evidently wishes us to accept as coming from the *Allgemeine Medicinische Central-Zeitung*.

For comparison I reproduce Dr. Arthur J. Hall's quotation and beside it the original, which the advertisers do not mark as a quotation.

FROM DR. ARTHUR J. HALL'S LETTER.	FROM SCHERING & GLATZ'S ADVERTISEMENT.
In the *Allgemeine Medicinische Central-Zeitung*, 1893, Nos. 45 and 46, Dr. Fritz Hölscher gives an interesting account of his experiences with guaiacol carbonate as an intestinal antiseptic, more especially in typhoid fever.	In the *Allgemeine Medicinische Central-Zeitung*, 1893, Nos. 45 and 46, Dr. Fritz Hölscher gives an interesting account of his experiences with guaiacol carbonate as an intestinal antiseptic, especially in typhoid fever.

I am at a loss to understand by what peculiar process of cerebration Dr. Hall creates evidence that Dr. F. von Heyden's successors at Radebeul, Germany, had never heard of my having treated typhoid fever with guaiacol carbonate because Messrs. Schering and Glatz of New York have mentioned the fact that Dr. Hoelscher had done so, and while I have no means of knowing that Dr. Heyden's successors had then or have yet heard of me, I protest against Dr. Hall making public declaration to the contrary unless he has some better source of information than an advertising circular issued by a New York drug house.

I protest, too, against Dr. Hall taking it upon himself to fix so high a standard of morality for me, while he has himself garbled my language, misstated my claims, and accused me of an offense of which I am *not*, and he *is*, guilty.

Can it be that he is endeavoring to pose as a reader of a standard German medical periodical which he seems not to have seen? Does he wish to palm off a quotation from a little advertising circular of an American drug house, as coming from a German publication of recognized standing, without giving the credit which is justly due the advertiser, while criticising me for failing to mention the partial success of Hoelscher in the treatment of typhoid fever, which I had so completely mastered so many years before?

I am, etc., JOHN ELIOT WOODBRIDGE, M.D.

A Wisconsin Diploma Mill.

SEATTLE, WASH., April 10, 1896.

To the Editor:—Knowing that the JOURNAL as well as its many readers will give its help to discourage frauds in the profession, and especially in regard to "Bogus and Cheap (so-called) Medical Schools and Colleges," I therefore send you the following "interesting" correspondence:

A few weeks ago my attention was attracted to the following advertisement which appeared in the *Pharmaceutical Era* bearing the date of March 12, 1896:

"WANTED—Pharmacists who desire legally to append M.D. to their name. Address Medico, 1809 Fond du Lac Ave., Milwaukee, Wis."

I at once wrote to the "Medicus" and in due time received the stock printed letter marked I. This last letter I also answered stating that I was very desirous to practice in the interior and for him to forward the questions. In due time letter marked II came to hand and the questions to be answered. With these I also enclose marked III.

Is it possible that the Wisconsin legislature granted a charter to such an institution? Can it be possible that a city has such an array of eminent medical men as she contains to-day, will permit such an *ulcer* to live and thrive in their midst? Can not something be done to prevent the traffic of medical diploma vending? There is no telling how many of these bogus sheepskins have been sold. Medical men of repute and standing should by all honorable means stamp this Hydra out of existence.

Medical examiners on boards of health should carefully scrutinize each and every diploma that comes under their observation, that it should not read emanating from this "institution." It is, too, very deplorable that such a well known and worthy journal as the *Pharmaceutical Era* should lend its columns to such an enterprise.

The so-called president, directors, secretary and treasurer are all "M.D.'s" and yet I can not find any of these names among the thousand medical men in the Medical Directory of the United States.

Trusting you will give this such publicity as your wisdom may think worthy, I remain

Very respectfully, EMIL BORIES, M.D.

I.

WISCONSIN ECLECTIC MEDICAL COLLEGE,
1809 Fond du Lac Avenue,
MILWAUKEE, WIS., March 24, 1896.

MR. EMIL BORIES, Seattle, Wash.

Dear Sir:—Replying to your letter of application of March 19, for particulars of our College, we have pleasure in forwarding with this our latest prospectus, which if you will carefully go over, will explain to you our mode of working. And after reading, if you will submit to us, fully and confidentially any doubts or seeming difficulties which may have suggested themselves; will on our part to do all we can to give (in extenso), thoroughly satisfactory replies and explanations.

Further, it would be of great benefit if in your reply, you would give us some idea of what medical knowledge or experience you have. This knowledge will enable us the better to advise you how to act, so as to obtain the desired M.D. degree. The obtaining of a medical diploma is a very great event in any person's life, as the legal append of M.D. gives to its holder an authority, and a certain position which can not be obtained in any other way. It raises the individual in the social scale no matter who he, or she may be.

We would ask your attention to the fact that we have this week made very large reduction in our fees which ought to bring them within the reach of all who are qualified. The fees which are inclusive of charges of every kind are reduced to $35.

We shall be glad to, and indeed expect to hear further from you, and to answer any or all questions you may desire to submit.

We are yours very sincerely,
WISCONSIN ECLECTIC MEDICAL COLLEGE.
FRED RUTLAND, M.D., President.

II.

WISCONSIN ECLECTIC MEDICAL COLLEGE.
1809 Fond du Lac Avenue.
MILWAUKEE, WIS., April 3, 1896.

MR. EMIL BORIES, Pharmacist, Seattle, Wash.

Dear Sir:—Yours of the 29th received with thanks. I enclose with this our examination blanks. The instructions are very simple, make your answers by number and also make your answers as brief as is consistent with making yourself clearly understood. Then, when through take your answers to a Notary Public and make a declaration in his presence that, they are your own unaided work. Send your answers to us and if found to be 75 per cent. correct, we can legally confer the degree and issue diploma.

Yours very respectfully,
FRED RUTLAND, M.D., President.

III.

EXAMINATION BLANK.

1. State your name in full, age and nationality.
2. Have you ever studied medicine in any medical school or college—if so, for how long.
3. Or under a preceptor or physician.
4. Or in private studies.
5. Have you ever practiced medicine either as a profession or otherwise.—For how long.
6. What school of medicine do you prefer.
7. What do you understand by the term an element.
8. Define a chemical change.
9. Define the term Decomposition.
10. Define the term Materia Medica.
11. Define the term Therapeutics.
12. Define the term Pharmacy.
13. Define the term Toxicology.
14. Define the term Obstetrics.
15. Name say thirty or more remedies which you consider in the front rank as being of most service to man.

16. What is the office and use of the Brain in the human anatomy and to what diseases is it most liable?
17. Same of the Lungs.
18. Same of the Heart.
19. Same of the Liver.
20. Same of the Spleen.
21. Same of the Kidneys.
22. Same of the Intestines.
23. Give an outline of how the bony frame work of the body is built up and name some of the more important bones.
24. Same of the Arterial and Venous system.
25. Same of the Nervous system.
26. Outline your treatment of Bronchitis, Cancer, Consumption, Diphtheria, Erysipelas, Fever (scarlet), Measles, and any other troubles you have particlarly studied or treated successfully.
27. What treatment would you give a case of poisoning by Belladonna, Digitalis, Chloroform, Carbolic acid, Nitric acid and Nit Silver.
28. What is a Tonic Medicine?
29. What is an Alterative?
30. What is an Antipyretic?
31. What is a Cathartic? Name two or more of each of these classes.
32. What is the first stage of labor? What is the second stage of labor? What is the third stage of labor?
33. How would you reduce a dislocation of the elbow joint?
34. How would you reduce a dislocation of the hip?
35. What is the essential difference between sterility and impotence?
36. Do you consider it good practice to administer as a regular thing such a class of medicines to a sick person which, would under ordinary circumstances make a healthy person sick?
37. Give your ideas of what characteristics a physician should have to make him or her successful.

Please return this list with your reply papers.

Dr. Reuben D. Mussey.

LEXINGTON, KY., April 20, 1896.

To the Editor:—My attention was called to your very interesting and able address contained in the JOURNAL of April 4 several days after I had written you acknowledging the receipt of a number of copies of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. I was a student under Dr. R. D. Mussey when he was a professor of surgery in Miami Medical College in 1856 and 1857, and he was my first teacher in surgery. He used to exhibit the specimen of the neck of fractured femur with bony union within the capsular ligament, the same that he took to Europe with him and showed to Sir Astley Cooper. Our class was always of the impression that he was the first to call attention to the fact, and I believe he so stated in his lectures. I saw in the last JOURNAL that Dr. Edward J. Brown advises that this honor belongs to Dr. Phineas Spalding, of Haverhill, New Hampshire.

If so, Dr. Mussey was never aware of the fact, and he was accorded the honor generally by surgeons of America. I was delighted to read your address on the biography of a great and Christian surgeon. I remember vividly his counterblast on tobacco and lectures on intemperance, and to which he would often refer in his lectures. With kind regards,

I remain yours, etc., F. M. GREEN, M.D.

The Oldest Alumnus.

CONCORD, N. H. April, 13, 1896.

To the Editor:—The JOURNAL of April 11, p. 748, says: "Death of the oldest Alumnus of Jefferson Medical College." Now while that is true, yet I would call your attention to the fact that the AMERICAN MEDICAL ASSOCIATION has a member in Newport, N. H., who was 86 years old February 17, and therefore from February to September older than Dr. Gemmell, but as he did not graduate at the Jefferson Medical College until 1836, he has not the distinction of being the oldest alumnus.

Dr. John L. Swett was born in Clairmont, N. H., February 17, 1810. Graduated from Jefferson Medical College, in 1836, and located in Newport, N. H., the same year. He has done a good business and commands the universal respect of the profession and the public. Yours truly,

G. P. CONN, M.D.

"The American Medical Association."

TECUMSEH, MICH., April 20, 1896.

To the Editor:—"The AMERICAN MEDICAL ASSOCIATION—what is it?" A "Correspondent" asks the *Record* the above inquiry (see p. 843). It would be a difficult matter to state whether or not the above paragraph emanated from the brain of the editor of the *Medical Record* or the printer's devil; it is unworthy of the former and scarcely worthy of the latter. Permit me to state for the benefit of the *Medical Record* that the AMERICAN MEDICAL ASSOCIATION is the only association that represents the medical profession in this country; that it is large enough to hold the brainy editor of the *Record*, and that it is even worthy of every "effort that he may make to get there"; that it possesses the best medical journal in America, and its editor knows how to run it. Very respectfully,

J. F. JENKINS, M.D.

ASSOCIATION NEWS.

Rush Monument Committee.

In consequence of the tardy returns from the members of the AMERICAN MEDICAL ASSOCIATION, who were constituted members of the Rush Monument Committee, returns of the several collections they have made will be received by the Secretary, Dr. George H. Rohé, Catonsville, Md., until Thursday, April 30, by which time it is earnestly hoped the pledges made at the Baltimore meeting will be redeemed. It must be remembered that these obligations were voluntarily assumed and without a dissentient voice. It is expected, therefore, that the returns to be reported at the coming annual meeting will be proportionate to the enthusiasm with which the present plan of obtaining contributions was adopted.

ALBERT L. GIHON, M.D., Chairman.
8 West 127th Street, New York City.

Section on Neurology and Medical Jurisprudence.

The following subjects will be discussed and papers presented:

THE ETIOLOGY OF INSANITY.

1. Discussion opened by W. F. DREWRY, Petersburgh, Va.
2. Paper by SMITH BAKER, Ithaca, N. Y.
3. Intoxication and Insanity, J. T. SEARCY, Tuscaloosa, Ala.
4. Remarks by FREDERICK PETERSON, New York City.
5. Inebriety in the Etiology of Insanity, J. N. QUINBY, Jersey City, N. J.
6. Duestro Case and Its Bearing on Alcoholism Epilepsy and Paranoia, LUDWIG BREMER, St. Louis, Mo.
7. Insanity in Children, E. D. FERGUSON, Troy, N. Y.

EXPERT MEDICAL TESTIMONY IN DISPUTED MENTAL CASES.

8. Discussion opened by CHAS. H. HUGHES, St. Louis, Mo.
9. Paper by L. HARRISON METTLER, Chicago, Ill.
10. Medical Aspect of Crime, JNO. C. LE GRAND, Anniston, Ala.
11. Necessity of Reform in Medical Expert Testimony, DANIEL R. BROWER, Chicago, Ill.
12. Paper by SAMUEL AYERS, Pittsburgh, Pa.
13. Remarks by J. J. M. ANGEAR, Chicago, Ill.
14. Proposed Regulation of Medical Expert Testimony, A. WALTER SUITER, Herkimer, N. Y.
15. Remarks by FREDERICK PETERSON, New York City.
16. Expert Testimony in Disputed Cases of Inebriety, T. D. CROTHERS, Hartford, Conn.
17. Remarks by HAROLD N. MOYER, Chicago, Ill.

MEDICAL ASPECTS OF CRIME.

18. Discussion opened by DANIEL R. BROWER, Chicago, Ill.

Topic: Some of the Physical and Psychical Peculiarities of the Habitual Criminal.

19. Physical Criminology or Symptoms of Crime, ARTHUR MCDONALD, Washington, D. C.
20. Paper by THOMAS D. COLEMAN, Augusta, Ga.
21. The Physiology and Pshychology of the Congenital Criminal, JAMES WEIR, Owensboro, Ky.
22. Medical Aspects of Crime in Relation to Insanity and States of Mental Enfeeblement, H. E. ALLISON, Mattewan, N. Y.
23. Medical Theories of Crime, W. O'DANIEL, Bullards, Ga.
24. Crimes Prevention in the Large Cities, G. W. INGRAHAM, Binghampton, N. Y.
25. Paper by ALBERT C. CORR, Corlinville, Ill.
26. The Physician and Criminal, J. B. RANSOM, Dannemora, N. Y.

OTHER PAPERS.

27. Medical and Surgical Treatment of Epilepsy, FREDERICK PETERSON, New York City.
28. Modern Methods of Treating Epilepsy, W. X. SUDDUTH, Chicago, Ill.
29. Inhibition as a Function of the Nerve Cell, WM. B. HALL, Sewanee, Tenn.
30. Feigned Insanity; Report of cases, W. F. DREWRY, Petersburgh, Va.
31. Criteria of Mental Aberrations, Chas. H. Hughes, St. Louis, Mo.
32. A Study of the Condition of Delirium in its Relation to Insanity, H. A. TOMLINSON, St. Peters, Minn.
33. Man's Brain and Mind; The Former Sometimes Insane, the Latter Never, G. W. DRAKE, Chattanooga, Tenn.
34. Drugs in Insanity, WM. S. WATSON, Fishkill-on-the-Hudson, N. Y.
35. The Pathology of Degenerative Habits, H. S. DRAYTON, New York City.
36. Neurotic Origin of Pulmonary Consumption, THOMAS J. MAYS, Philadelphia, Pa.
37. Angeioneurotic Edema, L. HARRISON METTLER, Chicago, Ill.
38. Etiology and Prophylaxis of Functional Nervous Diseases, JOHN PUNTON, Kansas City, Mo.
39. Some Observations on Paralysis Agitans, W. J. HERDMANN, Ann Arbor, Mich.
40. Electro-diagnosis Simplified, S. V. CLEVENGER, Chicago, Ill.
41. Franklinization as a Therapeutic Measure in Neurasthenia, MARGARET A. CLEAVES, New York City.
42. Hernia from a Medico-legal Standpoint, H. O. MARCY, Boston, Mass.
43. Some Medico-legal Questions in Surgical Operations, W. H. MANLEY, New York City.
44. The Medico-legal Significance of the Sciagraph, HAROLD N. MOYER, Chicago, Ill.
45. Psycho-neurosis following Anesthesia and Surgical Operations, HUGH HUGAN, Atlanta, Ga.
46. Functions of the Cerebellum and Some Suggestions as to Technique in Intracranial Operations, THOMAS D. COLEMAN, Augusta, Ga.
47. Diablepsia or Blindfold Vision, with an Illustrative case, H. A. MOODY, Mobile, Ala.
48. Alcoholic Multiple Neuritis, THEODORE DILLER, Pittsburg, Pa.
49. The Degeneracy of the Teeth and Gums, E. S. TALBOT, Chicago, Ill.
50. An Observation Relative to Localization in extradural Hemorrhage, E. D. FERGUSON, Troy, N. Y.
51. Electricity and Light as Therapeutic Agents, W. S. WATSON, Fishkill-on-the Hudson, N. Y.

W. J. HERDMAN, Secretary.

Section on Materia Medica, Pharmacy and Therapeutics.

TUESDAY, MAY 5—AFTERNOON SESSION.

1. Address of Chairman—The Practice of Pharmacy as a Liberal Profession, F. E. STEWART, Detroit, Mich.
2. How Much Pharmacy should be Taught in Medical Colleges? G. WALTER BARR, Keokuk, Iowa.
3. The Teaching of Materia Medica and Therapeutics in Our Colleges, DANIEL R. BROWER, Chicago, Ill.
4. Methods of Education in the Departments of Materia Medica and Therapeutics, H. W. ROGERS, Cleveland, Ohio.

Discussion: Opened by WARREN B. HILL, Milwaukee, Wis.

WEDNESDAY, MAY 6—MORNING SESSION.

5. Serum Therapy,
   (*a*) Principles of Serum Therapy. Contribution from the Harvard Laboratory. HAROLD C. ERNST, Boston, Mass.
   (*b*) Theory of Serum Therapy. Contribution from the Bacteriologic Laboratory of the City of Philadelphia. B. MEAD BOLTON, Philadelphia, Pa.
   (*c*) The Antitoxins, What They Are and How They are Prepared. Contribution from the Bacteriologic Laboratory of the University of Pennsylvania. JOSEPH MCFARLAND, Philadelphia, Pa.
   (*d*) Serum Therapy in Diphtheria, EDWIN ROSENTHAL, Philadelphia, Pa.
   (*e*) Antitoxin in Tetanus. Contribution from the Pepper Laboratory of Clinical Medicine. S. S. KNEASS, Philadelphia, Pa.

WEDNESDAY, MAY 6.—AFTERNOON SESSION.

6. Serum Therapy—Continued.
   (*f*) Tubercle Antitoxin, or Antituberculin, PAUL PAQUIN, St. Louis, Mo.
   (*g*) Protonuclein.

Discussion opened by GEO. L. STERNBERG, Washington, D. C.

THURSDAY, MAY 7—MORNING SESSION.

7. Suggestive Therapeutics.
   (*a*) Attention, a Factor in Therapeutics, G. V. I. BROWN, Duluth, Minn.
   (*b*) The True and Tenable Ground of Suggestive Therapeutics, J. B. TAYLOR, Bloomington, Ill.
   (*c*) Practical Uses of Suggestive Therapeutics, WILLIAM LEE HOWARD, Baltimore, Md.

Discussion.

THURSDAY, MAY 7—AFTERNOON SESSION.

8. Emergency and Stimulating Rations, CHARLES E. WOODRUFF, Fort Sheridan, Ill.
9. Prescription Writing and Pharmacy, as Practiced in Our Large Hospitals and Dispensaries, HENRY R. SLACK, La Grange, Ga.
10. Proprietary Medicines, O. D. BENSON, Des Moines, Iowa.

FRIDAY, MAY 8—MORNING SESSION.

11. A New and Improved Hypodermatic Case, ELMER LEE, Chicago, Ill.
12. Guaiacol Carbonate, V. W. GAYLE, Kansas City, Mo.
13. Discussion of the United States Pharmacopeia.
14. Report of Committee on Chairman's Address.

SOCIETY NEWS.

Mitchell District Medical Society.—The 49th semi-annual meeting of this Society will be held at Shelbyville, Ind., June 29 and 30, 1896. An elaborate program is being arranged containing papers by some of the most eminent men in the profession. The Shelby County Medical Society which has more than a State reputation as entertainers, is preparing to entertain the Society handsomely. The program will be issued about June 15.

The Ohio State Pediatric Society will hold its annual meeting at Columbus on Wednesday, May 27. Those who have papers to present should at once communicate with the Secretary, Dr. Geo. M. Clouse, of Columbus, giving title of paper. The other officers of the Society are: President, Dr. S. W. Kelley, Cleveland; Vice-President Dr. J. P. West, and Chairman of Council, Dr. J. M. Dunham, of Columbus. Any regular physician who is particularly interested in pediatrics and a worker therein is eligible to become a member of this young and growing Society. Drones not wanted.

Illinois State Medical Society.—The citizens of Ottawa, Ill., will be pleased to entertain at their homes all those who may attend the meeting of the Illinois State Medical Society, May 19, 20 and 21. In order to avoid confusion it will be necessary for those who wish to avail themselves of this offer to notify Dr. J. R. Hoffman, Secretary of the Committee of Arrangements. It will be impracticable for us to provide entertainment for those who do not notify us in advance of the meeting.

COMMITTEE OF ARRANGEMENTS.

Next Meeting of the Association.—*To the Editor:*—At a meeting of Philadelphia County Medical Society held April 15, a committee was appointed to urge the members of the AMERICAN MEDICAL ASSOCIATION to favor the holding of a semi-centennial celebration of its organization. The Society also instructed its delegates to invite the ASSOCIATION to hold the

meeting of 1897, which will be the semi-centennial, in the city of Philadelphia. Will you kindly give in the JOURNAL publicity to this announcement and advocate editorially the acceptance of the invitation to Philadelphia.

Yours very truly, JOHN B. ROBERTS,
JAMES C. WILSON,
WILLIAM M. WELCH,
Committee.

Philadelphia, April 17, 1896.

The Medical Society of the State of Pennsylvania will hold its forty-sixth annual meeting at Harrisburg, Pa., May 19 to 21, inclusive. The large number of papers and names of the writers assure a very "useful" meeting; the members will be well rewarded for their attendance. The Hall for the Exhibits is one of the finest in the city, a new building well lighted and with plenty of space for exhibitors. The exhibit will be confined to pharmaceutical articles recognized by the United States Pharmacopeia. It is the first of the kind held by any State medical society: perhaps we may say, by any medical society in the country. While these things of profit have been provided, those of pleasure have not been forgotten; receptions have been provided for so that the medical man and his wife can meet the citizens of the capital city of Pennsylvania. This will be the fourth time that the State Society has visited Harrisburg and some of the Committee of Arrangements have been on all four committees. No matter how many come, we can accommodate all.

Medical Association of Missouri.—Announcement. The Thirty-ninth Annual Meeting of the Medical Association of Missouri, will be held at the Court House in Sedalia, Mo., on Tuesday, Wednesday and Thursday, May 19, 20 and 21, 1896, convening at 10 o'clock, A.M., on Tuesday, the 19th. Sedalia is easily accessible from every section of the State, and we expect the largest attendance ever had by the Association. You are cordially invited to attend. We take pleasure in advising you that a rate of a fare and one-third for the round trip, upon the certificate plan from points in Missouri, has been granted to delegates; provided that not less than 100 tickets shall be certified to by the secretary. Take a certificate from the ticket agent when you buy your ticket, and if you travel over more than one road take a certificate for each ticket purchased. Present your certificate to the secretary as soon as you arrive. Do not purchase your ticket earlier than three days prior to the opening day of the meeting. The following roads have agreed to give the one and one-third fare on round trip tickets, viz: All roads belonging to the Western Passenger Association whose lines extend into Missouri; also the M. K. & T. Railway; and the Kansas City, Fort Scott and Memphis Railway, south of and via Clinton; Sedalia, Warsaw & Southern. The leading hotels will give reduced rates.

President, C. Lester Hall, M.D., Kansas City, Mo.: Secretary, Frank R. Fry, M.D., St. Louis, Mo.

W. A. Evans, E. F. Yancey, A. F. Dresel, Committee of Arrangements.

Sedalia, Mo., April 17, 1896.

National Confederation of State Medical Examining and Licensing Board.—The sixth Annual meeting of this organization will be held in Room No. 1, Hotel Aragon, Atlanta, Ga. (which offers reduced rates), Monday, May 4, 1896, at 10 o'clock A. M. The following program will be carried out, namely:

1. Introductory Remanks by the Vice-President.
2. Report of Committee on revision of the Constitution and By-Laws.
3. Discussion and action thereon.
4. Report of the Secretary.
5. Annual Address of the President.
6. Address by James Russell Parsons, Jr., Esq., Albany, Director of Examinations, University of the State of New York: Preliminary Education, Training and Practice in New York.
7. Paper—The Limitations of the Standard of Modern Educational Requirements, as Determined by State Medical Examining Boards, by Joseph M. Mathews, M.D., Louisville, Ky.
8. Paper—(Subject to be announced), by William S. Foster, M.D., Pittsburg, Pa.
9. Some obstacles to an Inter-State recognition of a State License to practice Medicine, with suggestions for their removal, by Charles McIntire, M.D., Easton, Pa.
10. Miscellaneous Business.
11. Election of Officers.

The objects of the Confederation, though purely of an advisory nature, are to discuss questions that pertain to State licensure in medicine, with a view to a comparison and improvement of methods, a collection and dissemination of information on the subject, and to consider any and all propositions that have for their purpose the advancement of the standard of medical education in the United States. The officers of the Confederation, therefore, beg to extend a cordial invitation to members of State Examining Boards, and all ex-members of State Boards, and especially to every physician and educator who is friendly to the objects sought, to attend the meeting and participate in the proceedings.

Please indicate by a note to the Secretary whether you will attend.

By order of the Executive Council.

B. M. GRIFFITH, Secretary.

Springfield, Ill., April 1, 1896.

PUBLIC HEALTH.

Sale of Second hand Clothing Not a Nuisance.—The supreme court of North Carolina declares, in the case of State v. Taft, Feb. 25, 1896, that the sale of second-hand clothing is not a nuisance in itself, but is, on the other hand, a lawful business. As a consequence, it holds that the commissioners of towns authorized to pass laws for abating or preventing nuisances of any kind, and for preserving the health of the citizens, can not pass an ordinance making it unlawful for any person to import into the town, for the purpose of selling or offering for sale, any second-hand clothing, cloth or bed furniture. But it does say that the town authorities would have the right to compel fumigation and disinfection of second-hand clothing, and that they might require proper assurances, before such articles were imported or offered for sale, that they have not been bought in or brought from markets or places where epidemics of contagious or infectious diseases were or had been recently prevailing, or they might prohibit the further sale of such stocks from which articles had been sold and had communicated disease. In the case of Rosenbaum v. City of Newbern, decided March 10, 1896, the same court holds valid a city ordinance which imposes a fine of $50 for selling or offering for sale second-hand clothing without having it disinfected by fumigation, and by paying a price fixed according to the nature of the garment, as set forth in the ordinance, for the city authorities to do the fumigating. Here the court says that the right to buy or sell such articles is not an absolute one, but may be subjected to such restrictions, by the lawmaking power intrusted with the authority, as may be necessary to make its exercise consistent with the safety and security of others.

Possible Co-existence of Smallpox and Cowpox.—Dr. S. L. Abbott, of the Massachusetts State Board of Health, has had a singular case, which, as given in the *Boston Medical and Surgical Journal*, for March 19, tends to confirm the generally accepted theory of the non-idenity of variola and vaccinia: "I was summoned one day to a young woman who was said to be a little indisposed, but on account of the appearance of a slight eruption it was thought expedient to call in a physician. I found her up and dressed, her symptoms not having been severe enough to keep her in bed at any time. All that I could see was a few, perhaps half a dozen, abortive pustules of varioloid. She did not feel at all sick. Its character was unmistakable, however. At the time there was a moderate epidemic of smallpox in the city, kept under control by general vaccination.

The patient had been vaccinated in childhood, which accounts for the mildness of her attack. In the same room with her was a nursing infant, six months old, which had not been vaccinated, and which I vaccinated at once. The vesicles of vaccinia developed normally, and were of such a perfect type that on the eighth day I took virus from the arm and vaccinated two interesting little girls about five and seven years old who had never been vaccinated before, the only children of a poor widow. The following day, on visiting the infant from whom I had taken the vaccine matter I was horrified to find a commencing eruption of smallpox. This developed rapidly, became very full and finally confluent—the pustules about the mature vaccine vesicles crowding upon them and entirely overwhelming them, so that they did not dry up in the usual way, but lost their individuality in the surrounding confluent eruption—and the child died in a few days. It can well be imagined that the succeeding week was not a very comfortable one for the vaccinator, who, however, succeeded in keeping his own counsel and waited for events. The vaccine development, however, went on in the vaccinated children in normal fashion, *producing perfectly normal vesicles*. In fact, it was so effectual that one more vesicle appeared in addition to those directly produced by the punctures of the vaccine quills, and close to them. No constitutional disturbance occurred, and the vesicles dried up in the usual way. There was no evidence whatever of variolous infection. A little consideration shows that the first child was vaccinated at a very early stage of the variolous infection, the system not being very powerfully impressed by it at the time, so that the vaccine virus was able to overcome it locally, establishing, so to speak, little islands of pure vaccinia which went to complete development before variola appeared on any part of the body. It seems to me that this case is of special value at the present time, when the claim is being made that the bacillus of variola and vaccinia is the same, and lately, in Paris, that vaccinia is nothing but attenuated variola. With regard to the former claim, if the assertion is true, the question comes up: What is the significance then of the bacillus? If the second is true, how could it happen that an attenuated virus, when planted in a soil already preoccupied by the same virus, did not develop with it and add to the intensity of its development?"

Michigan State Board of Health.—The regular meeting of the Michigan State Board of Health was held at Lansing, April 10, 1896. The meeting was called to order by the President Hon. Frank Wells of Lansing, and the following members were present: Prof. Delos Fall, Albion; Dr. Samuel G. Milner, Grand Rapids; Dr. George H. Granger, Bay City; Judge Aaron V. McAlvay, Manistee, and Secretary Henry B. Baker of Lansing. The regular business of auditing bills and accounts was transacted. The Board voted to direct the Secretary to request health officers from whom no annual reports had been received for the year 1895, to make such reports immediately, in accordance with State law, or proceedings would be commenced against such delinquent officers. Reports by Attorney Gen. Judge McAlvay and the Secretary of the Board, who read a letter from Health Officer Duffield, showed that the report of the health officer of Detroit was being made out and might be expected in a few days. One of the most important and interesting subjects which came to the attention of the Board was in connection with a communication from Gov. John T. Rich, which suggested that the State Board of Health communicate with the proper official at each State institution in Michigan, especially the several asylums for the insane, calling attention to the prevalence of consumption in animals and in man, the danger of this disease being spread from animals to man by means of the milk supply, and suggesting a plan whereby each institution could Pasteurize or in some way sterilize all the milk used. The Secretary mentioned that the subject of the Pasteurization of milk was being taught at the Agricultural Experiment Station, at Madison, Wis. If necessary, some person might be sent to this school for instruction, who could return and teach the subject in this State. He mentioned that Mr. Grosvenor is said to be Pasteurizing milk for sale in Monroe, Mich., and that a company in Northville has been thus preparing large quantities of milk for sale in Detroit. The Board directed the Secretary to send to the several State institutions communications which shall cover the Governor's suggestions for the sterilization of the milk supply for the inmates of State institutions. In connection with this subject the Secretary read an item relative to a farmer who lost two head of cattle from tuberculosis. Later the disease developed in the farmer's family, consisting of six members, all of whom, together with two attendants, have since died with consumption. The difficulties in the way of inducing the people generally to act on this subject are many, but the Board recognizes the fact that it is of very much greater importance that the milk supplies of cities and villages should be sterilized so as to be free from tuberculosis and typhoid fever germs, than it is to protect only the inmates of State institutions. The Board directed its Secretary to prepare for publication and general distribution a forcible statement of the facts and dangers from infected milk, and methods for the sterilization of the public and domestic milk supplies. The Secretary made a special report upon the distribution of the Board's leaflets and pamphlets relative to communicable diseases, to school teachers, county school commissioners, city school superintendents, and in a number of instances to pupils in high schools. This report showed that there are about 16,000 teachers in Michigan, and that about 20,000 sets of such publications had been sent out. This distribution of leaflets was in compliance with Act 146, laws of 1895, which requires the Board to supply data and statements bearing upon the modes of spreading and the best methods for the restriction and prevention of the dangerous communicable diseases, which subject is required to be taught in every public school in Michigan.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Michigan: Bay City, Ionia, Marine City, April 4 to 11, smallpox reported; Detroit, April 11 to 18, 1 case, 1 death.
Louisiana: New Orleans, April 4 to 11, 74 cases, 23 deaths.
Alabama: Mobile, April 5 to 12, 2 cases, 1 death.
Ohio: Dayton, April 9 to 16, 4 cases.
Kentucky: Paducah, April 7 to 14, 5 cases.

SMALLPOX—FOREIGN.

Dublin, March 28 to April 4, 1 death.
Alexandria, March 5 to 11, 1 death.
Amsterdam, March 28, to April 4, 1 case.
Cairo, March 5 to 11, 2 deaths.
Cardiff, March 28 to April 4, 1 case.
Cienfuegos, March 29 to April 5, 1 death.
Corunna, March 21 to April 4, 3 deaths.
Genoa, March 28 to April 4, 2 cases, 1 death.
Hamburg, March 28 to April 4, 3 cases.
London, Eng., March 21 to 28, 33 cases.
Odessa, March 21 to 28, 14 cases, 3 deaths.
Prague, March 21 to 28, 14 cases.
Santiago de Cuba, April 4 to 11, 2 deaths.
St. Petersburg, April 14 to 21, 17 cases, 4 deaths.
Tuxpan, March 21 to April 4, 2 deaths.
Warsaw, March 14 to 21, 1 death.

CHOLERA.

Alexandria, March 5 to 11, 2 deaths.
St. Petersburg, March 14 to 21, 1 case.

YELLOW FEVER.

Santiago de Cuba, April 4 to 11, 1 death.
Rio de Janeiro, March 7 to 14, 231 deaths.

NECROLOGY.

JAMES WEST ROOSEVELT, M.D., of New York city, died unexpectedly from pneumonia on April 10, aged 38 years. He was the son of the late S. Weir Roosevelt, a nephew of James A. Roosevelt and a cousin of Theodore Roosevelt, President of the Police Board. He was an alumnus of Columbia College medical department, of the class of 1880. A widow and three young children survive him. He was a member of the Academy of Medicine, the Medical Surgical Society, the Practitioners' Society, the Pathological Society, and was attending physician at Bellevue, Roosevelt and Seton Hospitals. He was a man of versatile ability, a graceful yet forcible writer, and a specialist in affections of the thoracic viscera.

MARIE PHILIBERT CONSTANT SAPPEY, M.D., of Paris is

deceased. *Science* thus speaks of him: "The anatomist, Dr. P. C. Sappey, died on March 14, at the age of 86. He was the author of important researches on the respiratory apparatus of birds, on the lymphatics and on other subjects, but is best known for his great work on 'Descriptive Anatomy,' which was begun in 1847 and completed in 1863." His second edition, revised throughout, was published from 1867 to 1872 in four volumes. He also wrote upon special subjects, such as the anatomy of the human urethra and the pathology of hepatic cirrhosis.

JAMES P. PARKER.—The editor of the *General Practitioner* announces the decease of Dr. James P. Parker, of St. Louis, who was editor and proprietor of the *Annals of Ophthalmology and Otology* since 1890. He was born forty-two years ago on a farm near Marshall, Ala., and after receiving such education as the county schools afforded, he began the study of pharmacy and received his degree in this branch of medicine in 1883. He then entered Jefferson Medical College and graduated with the degree of M.D. in 1886.

DR. MARY E. OSBORN died April 5 at the Jewish Hospital, Cincinnati, aged 40 years. She graduated at the Philadelphia Woman's College in 1883, and has filled several important positions of trust with conscientious fidelity, among which were the superintendency of the Aultman Hospital at Canton, Ohio; Preston Retreat, Philadelphia, etc. The cause of death was multilocular, gangrenous ovarian cyst. Dr. Osborn was one of the best educated and foremost of America's women practitioners.

JOHN F. MCKENZIE, M.D., of Leroy, Ill. (Louisville Medical College 1874), April 14. The McLean County Medical Society met and passed appropriate resolutions.——Alfred Miller, M.D., of New Ulm, Minn., at Berne, Switzerland, March 3. He was surgeon U. S. Vol., from 1861 to 1864, and stationed at Fort Ripley.——A. H. Williams, M.D., of Hendersonville, Tenn., shot from ambush while on his professional round of visits, April 11.——F. H. Conger, M.D., of Prairie du Sac, Wis. (College of Physicians and Surgeons, N. Y., 1872), April 7.——Thos. M. Hess, M.D., of Berwick, Ill. (Rush Medical College 1871), April 9, aged 77.——W. C. Tappan, M.D., of Baltimore, Md., April 10, aged 78.——S. L. Brown, M.D., of David City, Neb., April 11, aged 80.——W. K. Mattern, M.D., Coroner's Physician of Philadelphia, Pa. (Jefferson Medical College 1882), April 16.——Chester A. Hard, M.D., of Los Angeles, Cal., (Ind. Med. College 1845), April 18.

BOOK NOTICES.

History of the Life of D. Hayes Agnew, M.D., LL.D. By J. HOWE ADAMS, M.D. Philadelphia and London: The F. A. Davis Company, Publishers. 8vo, cl., pp. 376.

The Chicago office of the F. A. Davis Company are making a clearance sale, at a greatly reduced price, of the biography of this well-known Philadelphia surgeon. The volume contains the story of the life of Dr. Agnew, with that of the ancestral records of the Agnew family. The story of the early professional life of Dr. Agnew is full of suggestiveness and encouragement to those for whom life seems a bitter mockery and a failure generally. Lives of men who have distinguished themselves in any branch of professional learning are always interesting and instructive, but doubly so when the subject of the biography has such a brilliant career as the late Dr. Agnew.

The International Medical Annual and Practitioner's Index for 1896. Edited by a corps of thirty-seven department editors, European and American, specialists in their several departments. 728 octavo pages. Illustrated. $2.75. E. B. Treat, Publisher, 5 Cooper Union, New York.

This fourteenth edition of the well-known year book has been carefully prepared, and brought quite up to date. It is doubtless one of the first of the annuals to have articles on "remedial cycling" and the new photography, each of which topics is managed with knowledge and ability.

MISCELLANY.

Mineral Springs.—There are 1,044 in France that have been exploited, and the number of visitors in 1894 was over six hundred thousand.

The 4th International Congress of Criminal Anthropology will be held at Geneva, Switzerland, August 24 to 29. All articles must be in French.

Rommelaere Institute.—The government of Belgium has just received a bequest from M. Renier, of $400,000, to found a medical college to be called the Rommelaere Institute.

Female Medical Students.—Out of a total of 1,004 students in Switzerland 304 are women, and they rank high in their studies.

A New Means of Livelihood.—A Paris daily recently contained an advertisement for a person of fine and distinguished physique, to attend in the waiting room of a physician, in the capacity of a "cured patient."

Are Venereal Diseases a Cause for Divorce?—This question was discussed at a recent medico-scientific meeting at Bonn, and decided in the negative, but the Russian periodical, *Wratch*, asserts that the consequences are so serious that the marriage should be dissolved at once upon their appearance.

The Centennial of the Societe de Medecine at Paris, was celebrated March 22, with great éclat. A century of labors for humanity and science is a grand record, and the AMERICAN MEDICAL ASSOCIATION, but half as old, will send its greetings and congratulations to this noble daughter of the Revolution.

New Method of Injecting Serum.—Recent experiments with rabbits have shown that if the antistreptococcus serum is injected all around a patch of erysipelas, the lesion is confined within it and heals rapidly. The quantity used was only ¼ c.c. The same quantity injected elsewhere had no effect.—*La Semaine Médicale*, April 1.

Chemical Warming Oven.—The *Therap. Woch.*, March 29, describes a new apparatus that holds vessels, cups, etc., filled inside with sodium acetate, which has the property of retaining its heat almost indefinitely when once heated. Boiling water set in the apparatus was found at 150 degrees three hours later. It is designed to keep food, etc., warm for invalids, infants, etc.

Medical Experts.—Some of the medical journals of France and Belgium are urging the formation of a medical corps, to serve as medical experts in court, with a special medical and legal training for this end, which requires knowledge and talents of a high order, and should be suitably dignified and remunerated. Germany has long had a court officer of this sort (Gerichtsarzt).

Pocket Full of Spoons.—A physician recently appeared at a meeting of his medical association in this condition. He stated that he had accumulated them at the houses of his patients and measured their capacity, which he found different in every case, ranging from two-thirds to three times the standard capacity. One teaspoon held exactly five times as much as another. He had brought them to serve as a warning to his colleagues in ordering their medicines.

The Sero-therapeutic Tuberculous Truce.—Bernheim has succeeded in arresting the progress of tuberculosis with forty to sixty inoculations of a serum he prepares from human Koch bacilli, injected for five or six months into animals. When this tuberculous truce, as he calls it, is secured, he sends the patient to some fresh air cure or sanitarium to maintain this improvement, and strengthen the reserve forces of the organism.—*Union Médicale*, March 28.

The Roentgen Ray as a Moral Agent.—The *Union Médicale*, March 28, reports the case of a young woman who applied for an operation on account of pains in her arm, as she was convinced

that there was some abnormal condition of the bone. The surgeon diagnosed the case as the effect of some slight traumatism on a hysterical subject, and by taking a photograph of the arm proved to her that it was perfect. Once convinced of this, the patient left entirely cured.

Causes of Migraine or Periodic Headache.—Dr. Marcus, of Pyrmont, announces the discovery that the periodic headaches he has suffered from for forty years are directly due to changes in the atmospheric pressure. He has watched the advent of his attacks and those of others, and finds them always coinciding with a variation in the pressure, which is not always accompanied by changes in weather, but is always confirmed next day by the official weather bulletin. It seems to depend on the rapid fluctuations of pressure, and therefore he asks physicians who reside in localities where the atmospheric pressure is more stable, to investigate the subject, and possibly discover some way in which chronic sufferers may find relief.—*Therapeutische Wochenschrift*, March 29.

High Class Journalism.—We clip the following from the New York *Medical Record:* "The AMERICAN MEDICAL ASSOCIATION—What is it? A correspondent asks for information as follows: I see that the AMERICAN MEDICAL ASSOCIATION will meet in Atlanta soon. Can you give me any data on the subject or refer to any one who can—how large a society is it, date and place of meeting? I am especially interested in Jenner and vaccination and I would like to present some matter to the society, if it is a large society and worthy of the effort."

The foregoing inquiry shows the state of imbecility to which a presumably healthy brain may come when its possessor depends for information solely on the poor old *Record*.

Defective Legislation as to the Supply of Anatomic Material.—The *General Practitioner* calls attention to the troubles that are liable to arise from "shy legislation" on behalf of a proper study of anatomy. "The Medical College of Des Moines, Iowa, which is the medical department of the Drake University, has recently become troubled over the manner in which it procured bodies for dissection. Corpses were recently shipped from Omaha to this college and several arrests followed. It seems that our western colleges are particularly unfortunate in this respect. The success of the present session of the Topeka Medical College, located at Topeka, Kas., has been almost destroyed through troubles of a similar character to that mentioned above. Some legitimate provision should be made looking to the procuring of dissecting material for all colleges and thus avoid the sensational exposures which have followed each other during the past winter."

Sun Sanitarium.—The *Semaine Médicale*, April 1, describes the Rikli sanitarium in the mountains near Trieste, where the patients are kept out of doors, and exposed to the sun, wind and rain, in complete nudity, the head alone protected. The location of the institution is very beautiful, elevated, and secluded, with high walls separating the different parts of the large park. Commenting on the alleged credulity of the Germans, the writer adds that a hypnotizer of some fame was recently summoned from Dresden to Berlin, to treat an officer, général de brigade, in a large hospital there, for acute myelitis, under the eyes of the superintendent, and in spite of his protests.

A Reckless Midwife Committed for Manslaughter.—According to the *Press and Circular*, a midwife has recently been committed for manslaughter at the coroner's court, Sheffield, Eng., for attending a case of labor after having been warned against doing so. She had previously attended a case where death took place from puerperal fever, and four days after this she attended the woman whose death, also from pnerperal fever, became the subject of inquest.

Second Pan-American Medical Congress.—The *Escuela de Medicina*, Mexico, February 15, announces the appointment of the committee having this important enterprise in charge: President, Dr. Carmona y Valle; Vice-President, Dr. Lavista; Secretary, Dr. Licéaga. The date has been fixed for the 16th, 17th, 18th and 19th of next November, with an inaugural, a closing and an extra day devoted to science. Spanish, English and French are the official languages. It is hoped that there will be a large representation of "medicos" from the United States and Canada, as well as from the entire western continent. Dr. Lavista is the editor of the new publication of the Museo Anatomo-Patologico, which has just been inaugurated by the President of the Republic with much ceremony, and owes its existence to Dr. Lavista's efforts. He is also president of the Academia de Medicina.

The Life Insurance Companies on Uranalysis.—According to the *Medical Examiner*, March, one of the large New York companies has arranged to have all microscopic examinations of the urine of applicants made by expert microscopists, who are appointed for this purpose in various parts of the country. It has been ascertained that microscopic examinations are sometimes made when unnecessary, and where the cases would have been declined without them. It has also been found that reports of microscopic examinations are sometimes made by those who are so evidently unprepared to do the work needed, that for all practical purposes they are of no value. "This action," says the *Examiner*, "is a practical illustration of the importance of that which we have often urged upon both the medical examiners and medical colleges, namely, to be so prepared that, when asked to do that which legitimately belongs to their sphere of duty, they will not be found wanting. If medical examiners had been prepared to do this work, there is not a shadow of doubt but that they would still be doing it for this company. If there is still a desire to make microscopic examinations on the part of medical examiners, the common sense view of this matter is to prepare themselves for the work. Those who are prepared, and show companies that they are, will undoubtedly be retained. Colleges should see that their graduates are fitted for microscopic work before they certify that they are, by the issuance to them of a diploma."

The Anti-vivisection Movement in Massachusetts.—In the issue for April 10 of *Science* is a condensed paragraph regarding the action taken by the friends of modern methods of physiologic study: "At a postponed hearing on vivisection before the house committee of judiciary of Massachusetts, the proposed legislation against vivisection was opposed by Profs. Bowditch, Theobald Smith and J. J. Putnam, of Harvard University; Prof. Hodge of Clark University; Prof. Wilcox, of Wellesley College; Prof. Sedgwick, of the Massachusetts Institute of Technology, and others. President Eliot is reported by the Boston *Transcript* to have said that in the last twenty-five years, during which experiments in physiology had been conducted in Harvard, not a single instance of a student bringing any complaint of cruelty against the work done in the physiologic laboratories had ever come to the knowledge of the corporation. There was no abuse of vivisection in Massachusetts. The men whom this bill indirectly accused of cruelty to animals were the most humane, merciful, clear-seeing men in the community, devoted, year after year, to the most humane occupation now existing in the world. Their profession showed in their faces, and he appealed to the members of the committee to know whether they thought that the men who had appeared before them could be guilty of the charge implied by the application for such legislation."

Jennerian Anniversaries.—We learn from the *British Medical Journal* that a committee has been formed in Berlin for the celebration of the Jenner centenary on May 14. Among the members are Profs. Virchow, R. Koch, von Leyden, Von Bergmann, Gerhard, König and others. The program includes an exhibition of portraits, medals, old and new instruments, writ

ings, etc., bearing upon Jenner's great discovery, and also a festive gathering on the day itself, intended not only to "honor the benefactor of the universe," but to protest against the anti-vaccination agitation which is constantly going on. The *Brooklyn Medical Journal* for April announces a banquet-celebration that has been appointed for May 14, 1896. The *Journal* says: "On Thursday, May 14, the Medical Society of the County of Kings will celebrate the centennial anniversary of the first vaccination of the cowpox as a protection against the most terrible disease which ever afflicted the human race. Though the plague was more deadly, it only visited the civilized world at long intervals, but the smallpox was always present, destroying annually nearly a million people, and the best authorities agree that during the eighteenth century no less than 45,000 people died from the dread disease in Europe; while in some portions of Asia cities were actualiy abandoned by their inhabitants to escape the disease which spared no one; and in America more than half of the afflicted Indian tribes were sacrificed to its ravages. When we contrast the eighteenth century with the nineteenth all will admit that the Entertainment Committee can not go too far in making the anniversary an event which will honor not only the name of Jenner and his work, but also the medical profession of the fourth city of the Republic."

Right to Unmutilated Body of Husband.—An entirely new question to the courts of New York, and one of considerable interest, was decided by the supreme court, appellate division, in the case of Foley v. Phelps, Feb. 21, 1896. The plaintiff's husband fell through an elevator shaft in a building in New York city, and was taken, in an unconscious condition, to the Bellevue Hospital, where he died three hours after admission. She applied, it is alleged, at the hospital for his body, and begged those who were in charge of it not to allow or permit an autopsy to be performed, and gave notice that she would immediately send an undertaker for the body, to remove it to her home, where it would be prepared for burial. Notwithstandiug this, she charges that the defendant, without her knowledge or consent, procured, assisted, aided and abetted in performing an autopsy on her husband's body. These allegations, the court says, clearly establish an unlawful act, for while the criminal law neither gives nor recognizes any right to institute a civil suit for damages, still it incontestably determines the wrongful nature of the act complained of, and a civil action will lie, and will lie in favor of the widow. Irrespective of any claim of property, the right which inhered in the plaintiff, as the decedent's widow, and in one sense his nearest relative, the court goes on to say, was a right to the possession of the body for the purpose of burying it; that is, to perform a duty which the law required some one to perform, and which it was her right, by reason of her relationship to the decedent, to perform. That right of possession, it holds, is a clear legal right, which the courts of law will recognize and protect. The right is to the possession of the corpse in the same condition it was when death supervened. It is the right to what remains when the breath leaves the body, and not merely to such a hacked, hewed and mutilated corpse as some stranger—an offender against the criminal law—may choose to turn over to an afflicted relative. The invasion or violation of this right furnishes a ground for a civil action for damages.

The Arterio-Venous Anastomosis Discovery Anticipated by Riolan.—Dr. Folet writes to *Progrès Médical* that the late anatomic surprise given to the medical world by Drs. Debierre and Gérard is referred to by Riolan, and by him ascribed to Galen. This anticipation may, in his opinion, be recalled of record without in any wise prejudicing the originality and merit of the work of his countrymen. He says, as quoted in the *New York Medical Journal*, that these arterio-venous anastomoses were pointed out without any direct demonstration or exact description by Riolan. The majority of authors speak of Riolan's "Encheiridium Anatomicum" (1648), without having read it, and that is the reason why Riolan has been accused of being one of the most systematically obstinate opponents of the theory of circulation. The truth is, says the writer, that Riolan's theory of the general circulation was an extremely curious and mixed one, and may be summed up as follows: There are blood vessels in which the blood circulates, the aorta and the vena cava. The blood takes a centrifugal course in the large artery, the aorta, and a centripetal course in the large vein, the vena cava. But in the medium or small blood vessels, arterial or venous, the blood is stagnant, or has a sort of slow backward and forward motion in order to nourish the tissues which it washes. The excess of the arterial wave—and here, says the writer, may be seen the coincidence between Riolan's theory and the facts pointed out by M. Debierre—passes from the large-sized artery, where it travels toward the periphery, into the large-sized vein, where it returns to the center through the anastomoses which exist between the arteries and the veins of the limbs. The existense of these anastomoses can not be denied, he says, for Galen demonstrated it and daily experience confirms it. Again Riolan wrote: "The veins have this peculiarity, that, in the limbs, they manifestly communicate with the arteries. Galen proved it, and it is so clear that we should not question it." The writer states that he has referred to the chapter in Galen's work indicated by Riolan, and that he has found nothing in regard to the subject, but in the preceding chapter he has found the following incidental passage: "The arteries which are brought together by several points with veins . . ." Riolan, then, says M. Folet, was much more explicit than Galen, whose authority he invoked. The writer states that he has called attention to the foregoing passages only because of the curious coincidence.

The Late Dr. Cheek, Medical Missionary to Siam.—The late Dr. Marion A. Cheek, of Oakland, Cal., had a romantic history, as reported in the San Francisco *Examiner*. The survivors of Dr. Cheek have a claim, growing out of his adventurous career, against the Siamese government for $80,000, the value of 176 elephants that were once his property, but which were, it is alleged, unjustly confiscated by the government. The *Examiner* says: "The story of Dr. Cheek's adventures in the East reads like a romance. He went to Siam a missionary of the Christian religion. His knowledge of medicine stood him in good stead. He ingratiated himself into the hearts of the princes of the land as well as the lowly natives, who saw in his remarkable cure of disease an unfathomable mystery. Dr. Cheek was an American. He overlooked no opportunity to better his condition. He gained valuable concessions from the Siamese government and established the business of logging teak timber to Bangkok, the capital. The returns were so great that some of the native princes in the interior cast longing eyes upon the profits the American was turning. One of them suggested a partnership. Dr. Cheek was loath to accept the proposition, but he decided that his own welfare demanded that he join hands with the dusky prince. The Doctor had an agreement with his princely partner as to the distribution of the labor. Cheek agreed to do the actual work. He went 500 miles into the teak timber district and hired many native laborers. He likewise secured 176 elephants. The Doctor had indifferent success one season. The river was low and no logging could be done. The prince became dissatisfied. He was appeased, thought Dr. Cheek, the following year, when a double quantity of timber was floated into Bangkok. Then the trouble commenced. The government took a hand. The Doctor's partner and prince assigned his interest in the firm to the royal family. The ruling powers were becoming dissatisfied with foreign interests and their extension in Siam. The excuse was readily found for action. The failure to make a

shipment of timber in one season opened the way. The government stepped in and confiscated Dr. Cheek's plant, elephants and all. This summary action ended the Cheek logging business. Minister Barrett at Bangkok has made every effort to bring the matter to a focus. The Siamese government is said to be desirous of submitting it to arbitration. The will of Dr. Cheek has been filed and probated in Alameda County. His widow and two children now reside in Oakland. They have local counsel, who are pressing the payment of the claim to their utmost."

Unobserved Gonorrhea of the Rectum.—Dr. Wallace Johnson, of Washington, writing to the *Medical News*, March 28, considers the question of the unobserved frequency of the above named symptom. On the same subject, in the February 20 number of the *Deutsche med. Wochenschrift*, in an article by Dr. Theodore Barr, Dermatologist to the City Hospital at Frankfort-on-Main, gives some unusual figures as to the frequency of the disease when carefully sought for. He says that from June 15, 1895, to Jan. 1, 1896, of 191 female patients with gonorrhea, 67, or 35.1 per cent., of all the cases, had gonorrhea of the rectum, as was established by microscopic examination. He thinks that the supposed rarity of the disease is owing to the fact that few cases give rise to symptoms pointing to the rectum. Few have bloody or purulent discharge from the rectum and few have pain or tenesmus. Where these symptoms are present he thinks them due to excoriations and ulcerations at the anus. Dr. Barr thinks that the cause is almost always found in a cervical gonorrhea, the secretions from which are carried into the rectum by the syringe nozzle, the thermometer or other manipulations about the anus by patients of not too cleanly habits. One of his cases developed a periproctitis as a complication, which afterward formed a fistula, in the discharge of which the gonococci were demonstrated.

The Dwarf Peoples of Africa.—Prof. Heli Chatelain, of the Smithsonian Institute, writes to *Illustrated Africa* the following observations respecting the wide distribution of the dwarf people of Africa. He says: "The Bushmen, or San, of South Africa belong to the same race as the pygmies or dwarfs of the Central African and equatorial forests. Their stature varies between four and five feet. Their physical appearance and their language show affinity with the Hottentots, but the relationship is very remote. The San language is poorer in morphology than the Khoi-khoi, but richer in clicks. The Bushmen, like the pygmies, are exceedingly timid, and hover, as Helots, on the skirts of Bantu settlements, whom they supply with game. The Hottentots, on the contrary, are pastoral, independent, and even aggressive. They are the terror of less audacious and less advanced Bantu tribes. Perhaps no savage people on earth excel the Bushmen as hunters; and their rock paintings show decided artistic aptitude. Both Hottentots and Bushmen are not numerous enough to resist, independently, the absorbing influence of their Bantu and European neighbors. The pygmies of Central and Equatorial Africa form, most probably, one ethnic class with the Bushmen of South Africa. Their language, however, is not yet sufficiently known to warrant the expression of an opinion as to kinship with San. They are hunters and fishermen, living in temporary grass huts of the beehive shape, and keep no domestic animal save chickens. Though culturally on the lowest scale, they are said to possess many virtues; and may, under the regenerating influence of the Gospel, develop some sterling qualities and attain preëminence in certain specialties."

Proposed Adoption of the Anthropometric or Bertillon System of Identfication in New York City.—The Police Department of New York intend to put in operation a system of anatomic identification, similar to that in use in several European countries, and in Chicago in this country. The system derives its name from its inventor, Dr. Alphonse Bertillon, now the Chief of the Identification service at the Prefecture of Police in Paris. He called it the Anthropometric System, but the world insists on knowing it by his name. The system depends upon a series of accurate and minute measurements of various portions of the human frame, assisted by photographs. The photographs are not merely photographs of the face. These are valuable adjuncts, but are not infallible in themselves. The rapidity with which a professional rogue can change his appearance is astonishing. Photographs of particular feature are often more accurate and decisive. For instance, it is impossible among 100,000 individuals to find two ears exactly alike, except in the case of twin brothers. But photography, as already stated, is only an adjunct. The special value of the system depends upon measurements of those bony parts of the body which undergo little or no change after maturity and can be measured to within so small a figure as to be practically accurate. These are the head, the foot, the middle finger and the extended forearm from the elbow. In addition, measurements are taken of the length, the span, the trunk of the body and the right ear. Notes are made of the color of the eyes and hair, the supposed age and nationality and of any individual marks or scars upon the body. The measurements selected are those that science has indicated as being the least changing from year to year. The success of the system depends upon three facts, which Bertillon considered of great importance, and which many years of experience have rendered indisputable: The almost absolute fixity of the human skeleton beginning at and after the twentieth year of age; the extreme diversity of dimensions which the human skeleton presents when one subject is compared with another; the facility and relative precision with which certain dimensions of the skeleton are capable of being measured. The measurements adopted were as follows:

1, Three body measurements, consisting of height, standing, stretched out arms, height sitting; 2, four head measurements, consisting of length of head, width of head, length of right ear and width of right ear; 3, four limb measurements, consisting of length of foot, length of left middle finger, length of left little finger, length of cubit. All these measurements can be taken in a few minutes by any ordinary operator. The instruments are simple and can be obtained in Paris at a cost of about $11. The measurements are noted upon descriptive cards about six inches square, upon the same side of which are generally placed two photographs of the criminal, front and side view, and upon the back a record of his criminal operations, convictions, terms served, etc., and his scars and marks.

Practical Notes.

Vomiting of Pregnancy.—La Torre announced at a recent meeting of the Societa Lancisiana degli Ospedali, Rome, that he had succeeded in stopping the vomiting in three cases of this kind, by means of a simple tampon of ichthyol applied to the neck of the uterus.—*Gaz. degli Osp. e delle Clin.*, March 14.

Paramyoclonus Multiplex.—A typical case of this disease which had persisted thirteen years, was recently cured in five weeks with Fowler's solution, in doses increasing from 2 to 10 drops, three times a day. It was accompanied with cold lotions and galvanization.—*La Semaine Médicale*, April 1.

Effect of Castration on Skeletal Development.—Most travelers in the Orient have noticed the tallness of the eunuchs, and Poincet has called attention to the excessive growth of the bones in cases of early castration. He has recently commented on the curious fact that the exactly opposite effect, viz., stunted growth, is produced by lack of function in the thyroid glands.—*Province Médicale*, March 28.

Loretinate of Bismuth in Ophthalmia.—The *Revue Gen. d'Ophthalmologie*, March 31, states that this substance is a better antiseptic than iodoform, as it only develops colonies in forty-eight hours, while they are found in twenty-four hours with iodoform. As an occlusive dressing for the eye, loretinate of

bismuth offers superior advantages, preventive and curative, especially in cases of phlyctenular ophthalmia, for which it really seems a specific. It can be used with other treatment, which it seems to promote. Excellent to use as an accessory in cases of ocular ulcers, diphtheria, tuberculosis and epithelioma.

Blisters.—There have been some protests to Huchard's sweeping denunciation of blisters. Matthieu asserts that in hydrarthrosis a cantharides blister is invaluable, and he also uses them in gastralgia, on a space the size of a five franc piece. Adrian thinks that if the substance were applied in the form of chloroform solution, with a little squill, no bad results would follow, which he ascribes to the use of plasters that leave some of the irritant on the skin. In veterinary practice the blister is of the greatest service. All seem to agree that they are worse than useless in broncho-pneumonia, kidney and cardiac troubles, and for children and elderly persons.—*Bulletin Médical*, Mach 29.

Fragments of Lead in the Eye.—Valois recommends in cases of injury to the eye from some flying fragment of shot, immediate antisepsis of the eye and vicinity; also applications of ice with antiphlogistic treatment, sub-conjunctival injections of sublimate, slight compression of the eye-ball, but above all absolute repose. Later, if there is no reaction, an expectant policy is best, but if there is, and if the fragment can be seen with the ophthalmoscope, it is to be extracted. Enucleation or exenteration is required if there are inflammatory accidents, or enucleation alone if there are sympathetic complications. If the latter persist, with a probability that the fragment is still in the orbit, curettement must follow. If the fragment is producing paralysis by its pressure on some nerve, it must be sought and removed.—*Gaz. Méd. de Liége*, April 2.

Intra-peritoneal Rupture of Ovarian Cysts.—There are about three hundred cases of these ruptures on record, and where they used to be followed by grave consequences, modern asepsis has much reduced the fatality, which was 63 in 127 cases (Nepveu, *Annales de Gyn.*, 1875). The recent cases of gelatinous effusion have all recovered after laparotomy, and Professor Lannelongue reports several cases of ruptured cysts discharging fluids and pus into the peritoneal cavity, which recovered after ovariotomy, without septicemia or drainage, showing that the pus must have been sterile. Animals inoculated with the gelatinous effusion did not show any aseptic consequences. Hence, infection need not necessarily follow the escape of the fluid into the abdomen during the operation. The *Bulletin Médical*, March 29, devotes several columns to a discussion of this subject by the Bordeaux *Société de Gynécologie*.

Progress in Electro-Therapeutics.—Professor d' Arsonval's announcement that alternating currents of great frequency and high tension exert a powerful and beneficial effect on the organism, has been verified by Apostoli, who places the patient in the center of a huge solenoid, without any direct contact with the wires. The currents circulate around him, and the results have been surprisingly successful in more than a hundred cases he has treated during the last year and half. Rheumatism and gout have been most benefited, diabetes next, but the general health in all has improved, insomnia ceases, and cheerfulness, appetite and strength return with these daily fifteen minute electric treatments. The process seems to be that all the organic transformations are facilitated and accelerated.—*Journal de Méd. de Paris*, March 28.

Salicylic Medication Through the Skin.—When salicylate of soda is not tolerated by the stomach, salicylate of methyl can be substituted for it in cases of acute articular rheumatism, administered through the skin. Linossier and Lannois, of Lyons, have secured fine results in this way, painting the thigh with 4 grams and covering close with an air-tight pad. The healthy skin will not absorb solids nor liquids, but it will absorb gases, and it is to the volatile properties of salicylate of methyl that its success is due in these cases. The skin absorbed it even when it was held at some little distance, showing that it was the vapors which were taken up. Almost half of the amount absorbed was eliminated in the urine within twenty-four hours. Grease or vaselin prevented absorption. Bourget has administered salicylic acid in a salve, but he mixes it with turpentine, which irritates the surface, so that it can no longer be called a strictly healthy skin.—*Bulletin de l'Académie de Médecine*, March 28.

The Alkaloid Derived from the Areca Nut.—The *British Medical Journal* quotes Dr. Mouquet, in *Nouveaux Remèdes*, regarding the therapeutic range of the hydrobromate of arecolin. This drug has a powerful sialogogue and diaphoretic action, and markedly stimulates intestinal peristalsis in horses and other animals. It has the same properties as eserin and pilocarpin, but in a higher degree, and the indications for its use are the same. Given hypodermically in doses of two centigrams to twenty-five milligrams it is found useful in animals, especially in the treatment of intestinal indigestion. Areca nut, though largely employed in veterinary practice, is little used in human medicine. The editor of the *Nouveaux Remèdes* suggests that arecolin might be worth trying on the human subject, but it would be prudent to begin with very small doses, such as two to four milligrams. Areca nut is said to be a powerful anthelmintic, the administration of which does not require to be preceded by a purge. It can be taken in milk or in soup without any unpleasant taste being perceived.

Detroit.

The Wayne County Medical Society at its regular meeting, April 16, had exhibited a young man by the name of Lewis, with a cardiac hypertrophy, mitral insufficiency, and possibly an aneurysm of the arch of the aorta. This individual has been exhibited before the medical class at the Fort Wayne Medical College, Ind., and also before the St. Louis and Cleveland College classes. At this time compensation seems to be fully established, and the outcome would be interesting and well worth writing up, as so many individual medical men have seen and examined this man. Delegates to the American Medical Association from the Wayne County Medical Society have been elected.

At the regular meeting of the Detroit Medical and Library Association, April 13, Dr. Frank Walker read a paper entitled, "Chronic Gastritis."

Health Office report for week ending April 18: Deaths under 5 years, 50, total 111; births, male 63, female 55, total 118. Contagious diseases: Diphtheria, last report 7, new cases 2, recovered 5, died 1, now sick, 3; scarlet fever, last report 25, new cases 7, recovered 11, died none, now sick 21; smallpox, last report none, new cases 1, died 1; measles, last report 1, new cases 1, recovered 1, died none, now sick 1.

Washington.

Weekly Report of Health Office.—The report of the Health Officer for the week ending April 11 is as follows: Number of deaths (stillbirths not included), 112; death rate per 1,000 per annum, 21.1; death rate per 1,000 per annum for the corresponding week last year, 20.2.

Inebriate Asylum Bill.—The Senate Committee has reported adversely the bill to create a hospital for the treatment of inebriety in the District of Columbia.

Anti-Vivisection Hearing.—The Senate Committee on the District of Columbia held a meeting on the 17th inst. to hear the views, pro and con, on the anti-vivisection bill. A most convincing argument against the passage of such a bill was made by Surgeon-General G. M. Sternberg, U. S. A.

Medical Society.—At the regular meeting of the society, held on the 13th inst., Dr. Compton reported a case of purpura hemorrhagica; Dr. Adair, U. S. A., reported a case of

appendicitis; Dr. McCormick reported a case of cancer of the stomach and hypertrophy of the heart, with specimens; and Dr. Magruder presented two specimens of cancer of the stomach.

TO FURTHER PROTECT THE INSANE.—Mr. Woodman, of Illinois, has introduced a bill in the House providing that no insane person, or person who is alleged to be insane, whether charged with crime or otherwise, shall be incarcerated in any insane asylum or hospital in the District of Columbia, or in any of the Territories, nor shall he be detained or confined by anyone until he has been brought before a court of records and adjudged to be insane. Such insane person shall be represented by counsel.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—The 245th meeting of the society was held on the 17th inst. Dr. Bromwell read a paper on "Meddlesome Midwifery," and Dr. T. C. Smith reported a case of fibroma of uterus distending the perineum, and presented the specimen.

Cincinnati.

THE HEALTH DEPARTMENT is examining the charges made by the barbers' union that a number of shops are using the dirty towels for many of their customers, thereby spreading disease.

THE MISSISSIPPI VALLEY DENTAL ASSOCIATION held their annual meeting in Cincinnati April 16.

A NUMBER of cases of diphtheria have developed at Glendale and an extra sanitary officer has been appointed.

A CASE of smallpox has developed at Lima, Ohio.

THE TRUSTEES of the Cincinnati Hospital have decided against the present free use of such expensive drugs as listerin, trionol, phenol, etc.

A DOZEN OR MORE of the most prominent practitioners of this city have organized what is to be known as the "Doctors' Headquarters." They are to occupy the Decorative Art Building on Garfield Place, and a telephone will be placed on each floor with connections with each office, a number of the different departments of practice will be represented, and in the event of an emergency call a response will be obtained from one present should the desired physician be absent.

THE FOLLOWING CASES were presented at the Academy of Medicine last week: Dr. E. W. Walker reported a case of dermoid cyst of the kidney, removed from a young child, with recovery. Dr. Joseph Ransohof reported a case of scirrhus cancer of the kidney, successfully removed from a young man about 25 years of age. Dr. E. Gustav Zinke exhibited a specimen of a large gangrenous multilocular ovarian cyst and hematoma (will be published in full in this JOURNAL). Dr. A. I. F. Buxbaum demonstrated the new method of cocain anesthesia by cataphoresis. He operated on a tooth which prior to anesthesia was so sensitive as to prohibit the touching of its surface, but after the application of a 30 per cent. solution of cocain on cotton and the current applied for about fifteen minutes the pulp could be manipulated without any pain on the part of the patient.

MEMBERS who contemplate attending the AMERICAN MEDICAL ASSOCIATION can obtain tickets, sleeping-car berths and all desired information by addressing Dr. G. I. Cullen, 714 West Sixth Street.

THE FOLLOWING APPOINTMENTS have been made at St. Mary's Hospital: Dr. Otis L. Cameron, to succeed Dr. Ferd Kramer, deceased; Dr. T. W. Hays, Pathologist; Dr. George B. Twitchell, assistant surgeon, and Dr. Charles R. Bush, microscopist.

THE FOLLOWING series of lectures are announced by the Young Men's Christian Association: April 8, "The Physiologic Effects of Alcohol," Dr. J. A. Davis; April 18, "Personal Purity," Dr. W. H. Taylor; April 23, "The Food We Eat," Dr. W. H. Taylor; April 30, "X Rays," Dr. S. P. Kramer.

THE ANNUAL REPORT of the Cincinnati Sanitarium shows that since the establishment of the institution twenty-three years ago, 2,711 patients have been admitted, while 1,242 have been discharged as cured. This is in the ratio of about 45.81 per cent., a very fair showing when we stop to consider that a recovery of 30 to 40 per cent is considered about the average of those receiving the most judicious and careful treatment.

THE MORTALITY REPORT for the week ended Friday, April 10, shows: Membranous croup 1, diphtheria 3, erysipelas 2, measles 9, typhoid fever 5, other zymotic diseases 4; cancer 5, phthisis pulmonalis 24, other constitutional diseases 3; apoplexy 3, Bright's disease 2, bronchitis 6, heart disease 9, meningitis 3, nephritis 3, pneumonia 23, other local diseases 25; deaths from developmental diseases 7, from violence 5, under 1 year 23, from 1 to 5 years 23, from all causes 142; annual rate per 1,000 21.09; deaths during preceding week 123, corresponding week 1895 97, corresponding week 1894 109, corresponding week 1893 119.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 11 to 17, 1896.

Capt. Nathan S. Jarvis, Asst. Surgeon (Willets Point, N. Y.), is granted sick leave of absence for one month and five days.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending April 18, 1896.

Asst. Surgeon C. M. De Valin, ordered to examination for promotion.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the fifteen days ended April 15, 1896.

P. A. Surgeon J. J. Kinyoun, to proceed from Washington, D. C., to Wilmington, Del., for special temporary duty, April 8, 1896.

P. A. Surgeon C. P. Wertenbaker, to proceed from Delaware Breakwater Quarantine to Wilmington, Del., for special temporary duty, April 8, 1896.

Asst. Surgeon J. A. Nydegger, granted leave of absence for two days, April 13, 1896.

Asst. Surgeon W. J. S. Stewart, granted leave of absence for six days, April 6, 1896.

Asst. Surgeon Seaton Norman, granted leave of absence for fifteen days, April 14, 1896.

Asst. Surgeon S. R. Tabb, to proceed from Richmond, Va., to Chicago, Ill., for duty, April 14, 1896.

Asst. Surgeon H. S. Mathewson, to proceed from New York, N. Y., to Boston, Mass., for temporary duty, April 6, 1896.

APPOINTMENTS.

Sherrard R. Tabb, of Virginia, and Henry S. Mathewson, of Connecticut, commissioned by the President as Assistant Surgeons, April 1, 1896.

Change of Address.

Armstrong, C. L., La Due, Mo.
Butler, G. F., from 851 Jackson St. to 794 Adams St., Chicago, Ill.
Edmonds, O. R., from St. Louis to Tina, Mo.
Henkle, C. K., from St. Louis, Mo., to Independence, Ore.
Kell, Baillie J., from New Cumberland to Barnhill, Ohio.
Keene, L. S., from De Land, Fla., to La Porte, Ind.
Kirkpatrick, C. D., from St. Louis to Centerville, Mo.
McMurtry, Milton, from Norman, Okla. Ter. to Purcell, Ind. Ter.
Pittsburg Medical Review, from 33 to 8 Ninth St., Pittsburg, Pa.
Raymond, W. C., from Evanston, Ill., to 11 Rue Léopold Robert, Près le Boulevard Raspail, Paris, France.
Russell, E. D., from Iowa City to Clare, Iowa.
Richman, S. T., from 5701 Wentworth Av. to 5729 Wentworth Av., Chicago, Ill.
Thomas, C. H., from 1807 Chestnut St. to 1633 Locust St., Philadelphia, Pa.
Wilder, Wm. H., from 4002 Ellis Av. to 5811 Ellis Av., Chicago, Ill.
Watts, G. W., from 2505 Calumet Av. to 361 W. 65th, Chicago, Ill.

LETTERS RECEIVED.

Allport, Frank (4), Minneapolis, Minn.
Baker, Henry B., Lansing, Mich.; Buxton, W. E., Samsville, Ill.; Burr, C. B., Flint, Mich.; Brooks, Allen C., Wilkesbarre, Pa.; Bastin, W. C., Mulkeytown, Ill.; Brooks, F., St. Paul, Minn.; Bowman, Ed. S., Davenport, Iowa; Baker, C. H., Detroit, Mich.; Bausch & Lomb Optical Co., Rochester, N. Y.; Burghardt, C. A., Milwaukee, Wis.; Battle & Co., St. Louis, Mo.; Babb, J. G., Columbia, Mo.; Bittman, Chas. W., St. Louis, Mo.; Bryant, D. C., Omaha, Neb.; Byrne, J. H., Chicago, Ill.
Connor, Leartus, Detroit, Mich.; Coe, H. W., Portland, Ore.; Cole, R. Beverly, San Francisco, Cal.; Cory, A. L., Chicago, Ill.
Danforth, L. L., New York, N. Y.; Dibrell, J. A., Little Rock, Ark.
Estes, W. L., So. Bethlehem, Pa.; Eastman, Jos., Indianapolis, Ind.; Elder, B. H., Peoria, Ill.
Ferguson, D. B., Troy, N. Y.
Griffith, F. P., Lagrange, Ind.
Hitchcock, C. H., Aurora, Ill.; Hobby, C. M., Iowa City, Iowa; Haldenstein, I., New York, N. Y.; Hammond, Wm. A., Washington, D. C.
Ingals, Fletcher E., Chicago, Ill.
Jackson, Edward, Denver, Colo.
Kelley, S. W., Cleveland, Ohio; Kibler, C. B., Corry, Pa.; Kell, J. B., Barnhill, Ohio; Kennedy, S., Shelbyville, Ind.
Lippincott, J. B., Company, Philadelphia, Pa.; Leatherman, J. R., Atlanta, Ga.; Lord & Thomas, Chicago, Ill.; Lawbaugh, A. I., Opechee, Mich.
Malsbury, L. O., Peru, Ind.; Marks, A. A., New York, N. Y.; Madison, H. L., Burlington, Iowa.
Nuzum, Helen B., St. Paul, Minn.
Peacock Chemical Co., St. Louis, Mo.; Preston R. J., Marion, Va.; Potter, William Warren, Buffalo, N. Y. Playter, Edward, Ottawa, Can.
Raymond, W. C., Paris, France; Reid, J. H., Burnettt Creek, Ind.; Rozzell, M. W., Pryorsburg, Mo.; Rio Chemical Co., (2) St. Louis, Mo.
Sternberg, Geo. M., Washington, D. C.; Sykes, G. A., New York, N. Y.; Shurts, W. H. Company, The, Newark, N. J.; Smith, B. M., Davis, W. Va.; Stearns, F. & Co., Detroit, Mich.; Spencer, George A., Haverhill, Mass.; St. Peter State Hospital, St. Peter, Minn.; Stevenson, David W., Richmond, Ind.; Staver & Abbott, Mfg., Co.; Chicago, Ill.
True, Charles, Kankakee, Ill.; Taggart, Gray, Galesburg, Ill.; Thayer, Chas. P., Boston, Mass.
Whittaker, J. T., Cincinnati, Ohio; Webb, C. W., Wellsboro, Pa.; Westmoreland, W. F., Atlanta, Ga.; Wyman, Hal. C., Detroit, Mich.; Würdemann, H. V., Milwaukee, Wis.; Woodward, W. C., Washington, D. C.; Waters, Geo. M., Columbus, Ohio.